

FIGURE 1

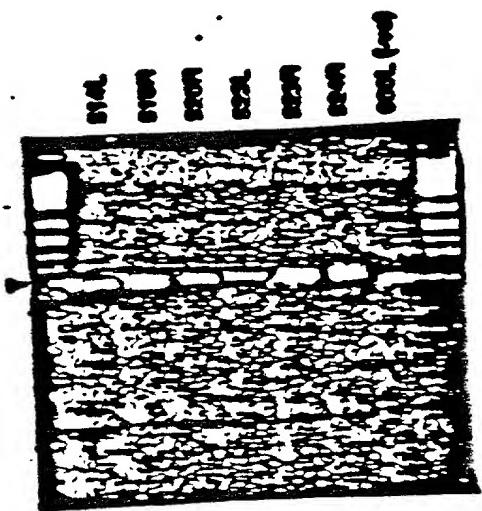


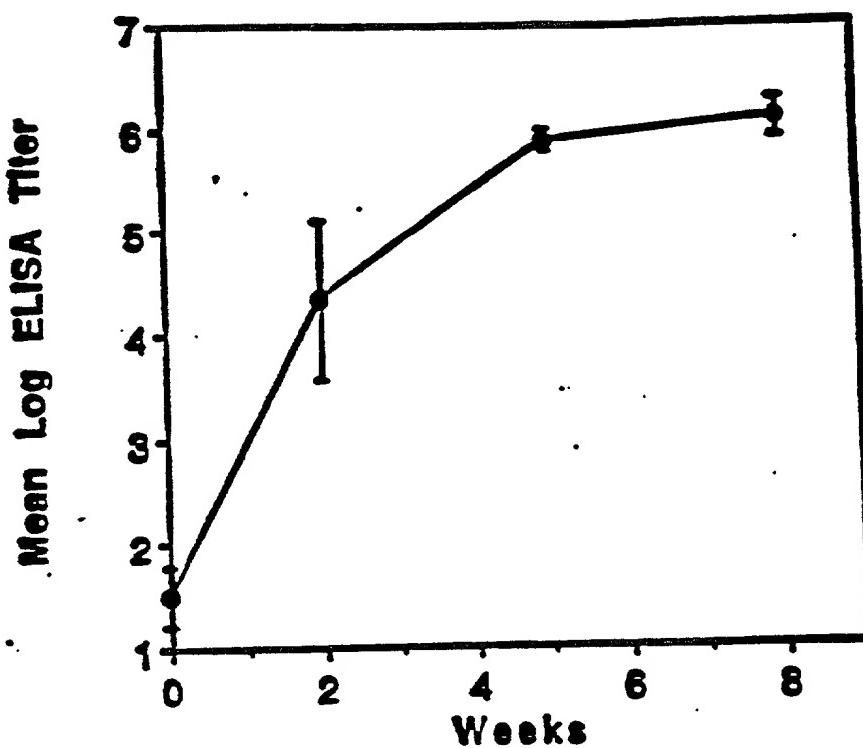
Figure 2

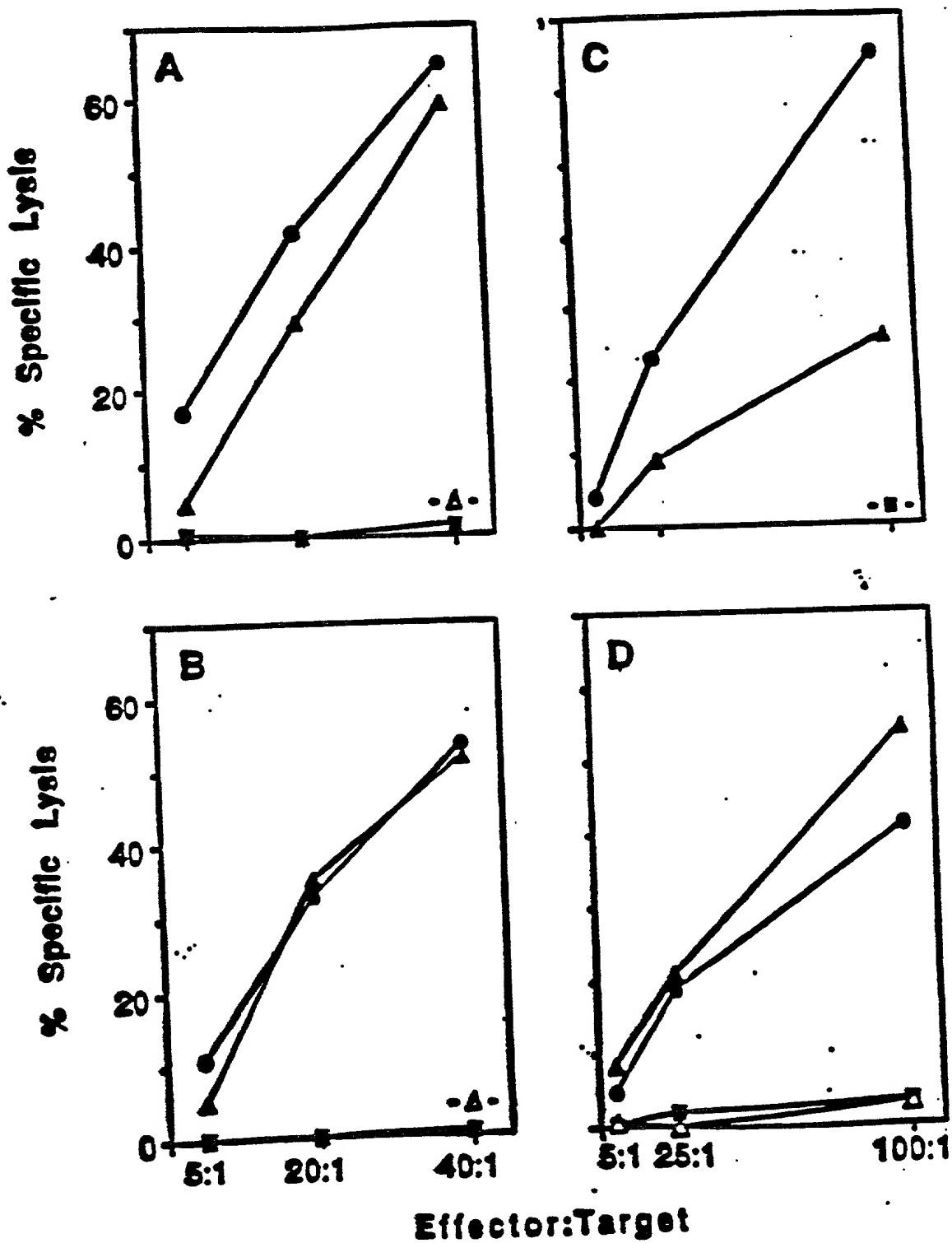
Figure 3

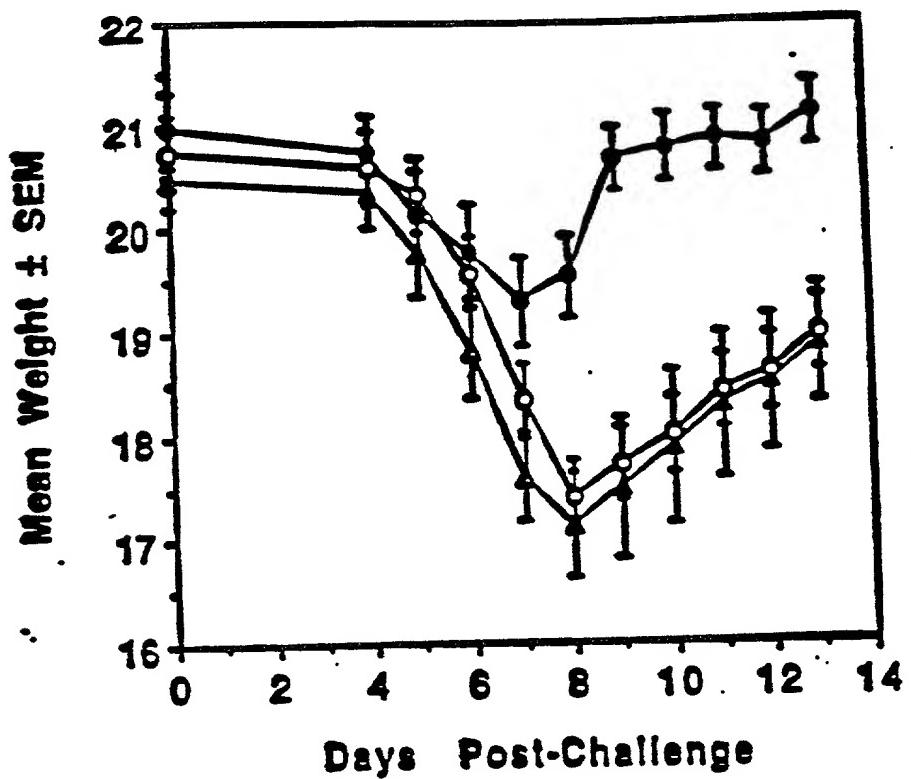
Figure 4

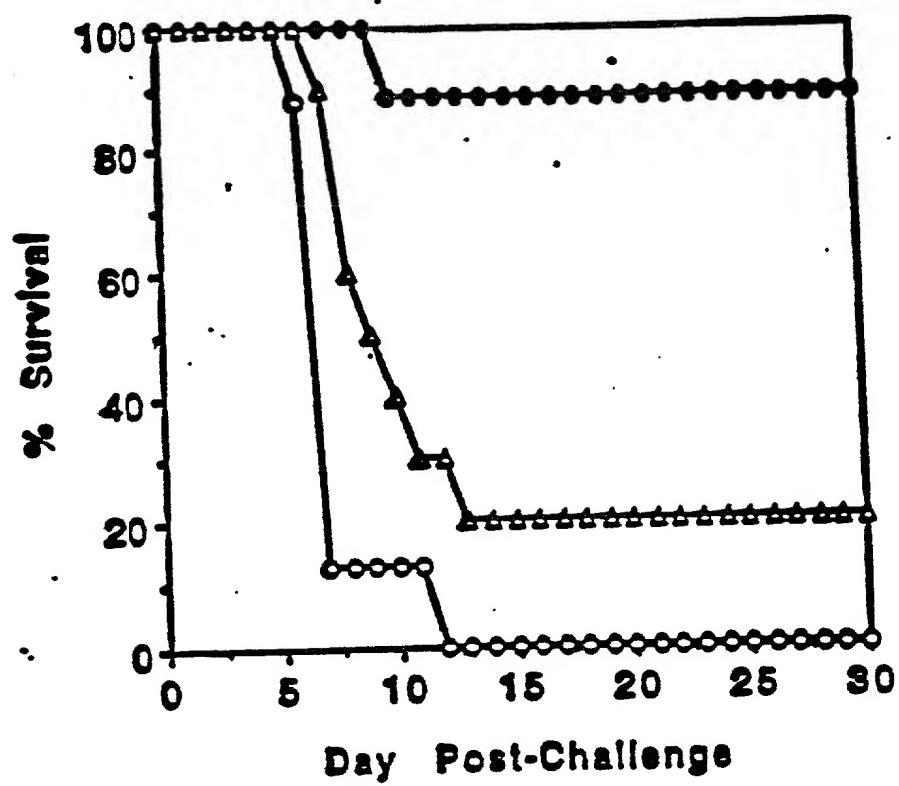
Figure 5

Figure 6: V1J Sequence, SEQ. ID:10:

1 TCGCGCGTTT CGGTGATGAC GGTGAAAACC TCTGACACAT GCAGCTCCCG
 51 GAGACGGTCA CAGCTTGCT GTAAAGCGGAT GCCGGGAGCA GACAAGCCCG
 101 TCAGGGCGCG TCAGCGGGTG TTGGCGGGTG TGGGGCTGG CTAACTATG
 151 CGGCATCAGA GCAGATTGTA CTGAGAGTGC ACCATATGCC GTGTGAAATA
 201 CCCCACAGAT GCGTAAGGAG AAAATACCGC ATCAGATTGG CTATTGCCA
 251 TTGCATACGT TGTATCCATA TCATAATATG TACATTATA TTGGCTCATG
 301 TCCAACATTA CCGCCATGTT GACATTGATT ATTGACTAGT TATTAATAGT
 351 AATCAATTAC GGGGTCATTA GTTCATAGCC CATATATGGA GTTCCGCGTT
 401 ACATAACTTA CGGTAAATGG CCCGCCTGGC TGACCGCCCA ACGACCCCCG
 451 CCCATTGACG TCAATAATGA CGTATGTTCC CATACTAACG CCAATAGGGA
 501 CTTTCCATTG ACGTCAATGG GTGGAGTATT TACGGTAAAC TGCCCACITG
 551 GCAGTACATC AAGTGTATCA TATGCCAAGT ACGCCCCCTA TTGACGTCAA
 601 TGACGGTAAA TGGCCCGCCT GGCATTATGC CCAGTACATG ACCTTATGGG
 651 ACTTTCTAC TTGGCAGTAC ATCTACGTAT TAGTCATCGC TATTACCATG
 701 GTGATGCGGT TTTGGCAGTA CATCAATGGG CGTGGATAGC GGTTTGACTC
 751 ACGGGGATT CCAAGTCTCC ACCCCATTGA CGTCAATGGG AGTTTGTGTTT
 801 GGCACCAAAA TCAACGGGAC TTTCCAAAAT GTCGTAACAA CTCCGCCCCA
 851 TTGACGCAA TGGCGGTAG GCGTGTACGG TGGGAGGTCT ATATAAGCAG
 901 AGCTCGTTA GTGAACCGTC AGATCGCCTG GAGACGCCAT CCACGCTGTT
 951 TTGACCTCCA TAGAAGACAC CGGGACCGAT CCAGCCTCCG CGGCCGGGAA
 1001 CGGTGCATTG GAACGCGGAT TCCCCGTGCC AAGAGTGACG TAAGTACCGC
 1051 CTATAGAGTC TATAGGCCCA CCCCCCTGGC TTCTTATGCA TGCTATACTG
 1101 TTTTTGGCTT GGGGTCTATA CACCCCCCGCT TCCCTATGTT ATAGGTGATG
 1151 GTATAGCTTA GCCTATAGGT GTGGGTTATT GACCATTATT GACCACTCCC
 1201 CTATTGGTGA CGATACTTTC CATTACTAAT CCATAACATG GCTCTTGCC

Figure 6 (continued, p2/4)

1251 ACAACTCTCT TTATGGCTA TATGCCAATA CACTGTCCCT CAGAGACTGA
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 1401 AACGTGGGAT CTCCACGCGA ATCTGGGTA CGTGTCCGG ACATGGGCTC
 1451 TTCTCCGGTA GCGGCGGAGC TTCTACATCC GAGCCCTGCT CCCATGCCTC
 1501 CAGCGACTCA TGGTCGCTCG GCAGCTCCTT GCTCTAACCA GTGGAGGCC
 1551 GACTTAGGCA CAGCACGATG CCCACCACCA CCAGTGTGCC GCACAAGGCC
 1601 GTGGCGGTAG GGTATGTGTC TGAAAATGAG CTCGGGGAGC GGGCTTGAC
 1651 CGCTGACGCA TTTGGAAGAC TTAAGGCAGC GGCAGAAGAA GATGCAGGCA
 1701 GCTGAGTTGT TGTGTTCTGA TAAGAGTCAG AGGTAACTCC CGTTGCGGTG
 1751 CTGTTAACGG TGGAGGGCAG TGTAGTCTGA GCAGTACTCG TTGCTGCCGC
 1801 GCGCGCCACC AGACATAATA GCTGACAGAC TAACAGACTG TTCTTITCCA
 1851 TGGGTCTTTT CTGCAGTCAC CGTCCTTAG ATCTGCTGTG CCTTCTAGTT
 1901 GCCAGCCATC TGTTGTTGC CCCTCCCCCG TGCTTCCCT GACCCTGGAA
 1951 GGTGCCACTC CCACTGTCTT TTCTTAATAA AATGAGGAAA TTGCATCGCA
 2001 TTGTCTGAGT AGGTGTCATT CTATTCTGGG GGGTGGGGTG GGGCAGCACA
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 2151 CAGAAAGAAG CAGGCACATC CCCTCTCTG TGACACACCC TGTCACGCC
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 2251 GCTCCGCCTT CAATCCCACC CGCTAAAGTA CTGGAGCGG TCTCTCCCTC
 2301 CCTCATCAGC CCACCAAACC AAACCTAGCC TCCAAGAGTG GGAAGAAATT
 2351 AAAGCAAGAT AGGCTATTAA GTGCAGAGGG AGAGAAAATG CCTCCAACAT
 2401 GTGAGGAAGT AATGAGAGAA ATCATAGAAT TTCTTCCGCT TCCCGCTCA
 2451 CTGACTCGCT GCGCTCGGTC GTTCGGCTGC GGCAGCGGT ATCAGCTCAC

Figure 6 (continued, p3/4)

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 3101 AAAAGAGTTG GTAGCTCTTG ATCCGGAAA CAAACCACCG CTGGTAGCGG
 3151 TGGTTTTTTT GTTGCAAGC AGCAGATTAC GCGCAGAAAA AAAGGATCTC
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 3251 AACTCACGTT AAGGGATTT GGTATGAGA TTATCAAAAA GGATCTTCAC
 3301 CTAGATCCTT TTAAATTAAA AATGAAGTTT TAAATCAATC TAAAGTATAT
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 3401 ATCTCAGCGA TCTGTCTATT TCGTTCATCC ATAGTTGCCT GACTCCCCGT
 3451 CGTGTAGATA ACTACGATAC GGGAGGGCTT ACCATCTGGC CCCAGTGCTG
 3501 CAATGATAACC GCGAGACCCA CGCTCACCGG CTCCAGATT ATCAGCAATA
 3551 AACCAAGCCAG CGGAAAGGGC CGAGCCAGA AGTGGTCTG CAACTTATC
 3601 CGCCTCCATC CAGTCTATTA ATTTGGCCG GGAAGCTAGA GTAAGTAGTT
 3651 CGCCAGTTAA TAGTTGCGC AACGTTGTTG CCATTGCTAC AGGCATCGTG
 3701 GTGTCACGCT CGTCGTTGG TATGGCTTCA TTCAGCTCCG GTTCCCAACG

Figure 6 (continued, p4/4)

3751 ATCAAGGCGA GTTACATGAT CCCCCATGTT GTGAAAAAAA GCGGGTAGCT
3801 CCTTCGGTCC TCCGATCGTT GTCAGAAGTA AGTTGGCCGC AGTGTATCA
3851 CTCATGGTTA TGGCAGCACT GCATAATTCT CTTACTGTCA TGCCATCCGT
3901 AAGATGCTTT TCTGTGACTG GTGAGTACTC AACCAAGTCA TTCTGAGAAT
3951 AGTGTATGCG GCGACCGAGT TGCTCTGCC CGCGTCAAT ACGGGATAAT
4001 ACCGCGCCAC ATAGCAGAAC TTAAAAAGTG CTCATCATTT GAAAACGTTG
4051 TTCGGGGCGA AAACTCTCAA GGATCTTACC GCTGTTGAGA TCCAGTTGGA
4101 TGTAACCCAC TCGTGCACCC AACTGATCTT CAGCATCTT TACTTCACC
4151 AGCGTTCTG GGTGAGCAAA AACAGGAAGG CAAAATGCCG CAAAAAAGGG
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4251 ATTATTGAAG CATTATCAG GGTTATTGTC TCATGAGCGG ATACATATT
4301 GAATGTATT AGAAAAATAA ACAAAATAGGG GTCCCGCGCA CATTCCCCG
4351 AAAAGTGCCA CCTGACGTCT AAGAAACCAT TATTATCATG ACATTAACCT
4401 ATAAAAATAG GCGTATCACG AGGCCCTTTC GTC

Figure 7: V1Jneo Sequence, SEQ. ID:18:

1 TCGCGCGTTT CGGTGATGAC GGTAAAAACC TCTGACACAT GCAGCTCCCG
 51 GAGAOGGTCA CAGCTGTCT GTAAGCGGAT GCCGGGAGCA GACAAGCCCCG
 101 TCAGGGGGCG TCAGCGGGTG TTGGCGGGTG TCGGGGCTGG CTAACTATG
 151 CGGCATCAGA GCAGATTGTA CTGAGAGTGC ACCATATGCC GTGTGAAATA
 201 CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGATTGG CTATTGGCCA
 251 TTGCATACGT TGTATCCATA TCATAATATG TACATTIATA TTGGCTCATG
 301 TCCAACATTAA CCGCCATGTT GACATTGATT ATTGACTAGT TATTAATAGT
 351 AATCAATTAC GGGGTCAATTAA GTTCATAGCC CATATATGGA GTTCCCGT
 401 ACATAACTTA CGGTAAATGG CCCGCCTGGC TGACCGCCCA ACGACCCCCG
 451 CCCATTGACG TCAATAATGA CGTATGTTCC CATAGTAACG CCAATAAGGA
 501 CTTTCCATTG ACGTCAATGG GTGGAGTATT TACGGTAAAC TGCCCACTTG
 551 GCAGTACATC AAGTGTATCA TATGCCAAGT ACCCCCCCTA TTGACGTCAA
 601 TGACGGTAAA TGGCCCGCCT GGCATTATGC CCAGTACATG ACCTTATGGG
 651 ACTTTCTAC TTGGCAGTAC ATCTACGTAT TAGTCATCGC TATTACCATG
 701 GTGATGCGGT TTTGGCAGTA CATCAATGGG CGTGGATAGC GGTTTGACTC
 751 ACGGGGATTTC CAAGTCTCC ACCCCATTGA CGTCAATGGG AGTTTGT
 801 GGCACCAAAA TCAACGGGAC TTTCACAAAT GTCGTAACAA CTCCGCCCCA
 851 TTGACGCAAA TGGGCGGTAG GCGTGTACGG TGGGAGGTCT ATATAAGCAG
 901 AGCTCGTTA GTGAACCGTC AGATCGCTG GAGACGCCAT CCACGCTGTT
 951 TTGACCTCCA TAGAAGACAC CGGGACCGAT CCAGCCTCCG CGGCCGGGAA
 1001 CGGTGCATTG GAACGGGAT TCCCCGTGCC AAGAGTGACG TAAGTACCGC
 1051 CTATAGAGTC TATAGGCCA CCCCCCTGGC TTCTTATGCA TGCTATACTG
 1101 TTTTGGCTT GGGGTCTATA CACCCCCCGCT TCTCATGTT ATAGGTGATG
 1151 GTATAGCTTA GCCTATAGGT GTGGGTTATT GACCATTATT GACCACTCCC

Figure 7 (continued, p2/4)

1201 CTATTGGTGA CGATACTTTC CATTACTAAT CCATAACATG GCTCTTGCC
 1251 ACAACTCTCT TTATTGGCTA TATGCCAATA CACTGTCTT CAGAGACTGA
 1301 CACGGACTCT GTATTTTAC AGGATGGGGT CTCATTATT ATTTACAAAT
 1351 TCACATATAAC AACACCACCG TCCCCAGTGC CCGCAGTTT TATTAACAT
 1401 AACGTGGGAT CTCCACGCGA ATCTCGGGTA CGTGTCCGG ACATGGGCTC
 1451 TTCTCCGGTA GCGGCGGAGC TTCTACATCC GAGCCCTGCT CCCATGCCTC
 1501 CAGCGACTCA TGGTCGCTCG GCAGCTCCTT GCTCCTAACCA GTGGAGGCCA
 1551 GACTTAGGCA CAGCACGATG CCCACCACCA CCAGTGTGCC GCACAAGGCC
 1601 GTGGCGGTAG GGTATGTGTC TGAAAATGAG CTGGGGGAGC GGGCTTGCAC
 1651 CGCTGACGCA TTGGAAAGAC TTAAGGCAGC GGCAGAAAGAA GATGCAGGCA
 1701 GCTGAGTTGT TGTGTTCTGA TAAGAGTCAG AGGTAACTCC CGTTGCGGTG
 1751 CTGTTAACGG TGGAGGGCAG TGTAGTCTGA GCAGTACTCG TTGCTGCCGC
 1801 GCGCGCCACC AGACATAATA GCTGACAGAC TAACAGACTG TTCTTTCCA
 1851 TGGGTCTTTT CTGCAGTCAC CGTCCTTAG ATCTGCTGTG CCTCTAGTT
 1901 GCCAGCCATC TGTGTTTGC CCCTCCCCG TGCCCTCCTT GACCCTGGAA
 1951 GGTGCCACTC CCACTGTCTT TTCTTAATAA AATGAGGAAA TTGCATCGCA
 2001 TTGTCTGAGT AGGTGTCATT CTATTCTGGG GGTTGGGGTG GGGCAGCACA
 2051 GCAAGGGGGA GGATGGGAA GACAATAGCA GGCATGCTGG GGATGCGGTG
 2101 GGCTCTATGG GTACCCAGGT GCTGAAGAAT TGACCCGGTT CCTCTGGC
 2151 CAGAAAGAAG CAGGCACATC CCCTCTCTG TGACACACCC TGTCACGCC
 2201 CCTGGTTCTT AGTTCCAGCC CCACTCATAG GACACTCATA GCTCAGGAGG
 2251 GCTCCGCCTT CAATCCCACC CGCTAAAGTA CTGGAGCGG TCTCTCCCTC
 2301 CCTCATCAGC CCACCAAACC AAACCTAGCC TCCAAGAGTG GGAAGAAATT
 2351 AAAGCAAGAT AGGCTATTAA GTGCAGAGGG AGAGAAAATG CCTCCAACAT
 2401 GTGAGGAAGT AATGAGAGAA ATCATAGAAT TTCTTCCGCT TCCCGCTCA

Figure 7 (continued, p3/4)

2451 CTGACTCGCT GCGCTCGGTC GTTCGGCTGC GGCGAGCGGT ATCAGCTCAC
 2501 TCAAAGGCGG TAATACGGTT ATCCACAGAA TCAGGGGATA ACGCAGGAAA
 2551 GAACATGTGA GCAAAAGGCC AGCAAAAGGC CAGGAACCGT AAAAAGGCCG
 2601 CGTTGCTGGC GTTTTCCAT AGGCTCCGCC CCCCTGACGA GCATCACAAA
 2651 AATCGACGCT CAAGTCAGAG GTGGCGAAC CCGACAGGAC TATAAAGATA
 2701 CCAGGCGTTT CCCCTGGAA GCTCCCTCGT GCGCTCTCCT GTTCCGACCC
 2751 TGCCGCTTAC CGGATACCTG TCCGCCTTTC TCCCTCGGG AAGCGTGGCG
 2801 CTTCTCAAT GCTCACGCTG TAGGTATCTC AGTCGGTGT AGTCGTTCG
 2851 CTCCAAGCTG GGCTGTGTGC ACGAACCCCC CGTCAGCCC GACCGCTGCG
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 3151 TGGTTTTTTT GTTGCAGC AGCAGATTAC GCGCAGAAAA AAAGGATCTC
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 3351 ATGAGTAAAC TTGGTCTGAC AGTTACCAAT GCTTAATCAG TGAGGCACCT
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 3551 GATGAGAGCT TTGTTGTAGG TGGACCAGTT GGTGATTTTG AACTTTGCT
 3601 TTGCCACGGA ACGGTCTGCG TTGTCGGAA GATGCGTGAT CTGATCCTTC
 3651 AACTCAGCAA AAGTTCGATT TATTCAACAA AGCCGCCGTC CCGTCAAGTC

Figure 7 (continued, p4/4)

3701 AGCGTAATGC TCTGCCAGTG TTACAACCAA TTAACCAATT CTGATTAGAA
 3751 AAACTCATCG AGCATCAAAT GAAACTGCAA TTTATTATA TCAGGATTAT
 3801 CAATACCATA TTTTGAAAA AGCCGTTCT GTAAATGAAGG AGAAAACCTA
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 4051 ACGCTCGTCA TCAAAATCAC TCGCATCAAC CAAACCGTTA TTCATTCTG
 4101 ATTGCGCCTG AGCGAGACGA AATACCGAT CGCTGTTAAA AGGACAATT
 4151 CAAACAGGAA TCGAATGCAA CCGGCGCAGG AACACTGCCA GCGCATCAAC
 4201 AATATTTTCA CCTGAATCAG GATATTCTTC TAATACTGG AATGCTGTT
 4251 TCCCAGGGAT CGCAGTGGTG AGTAACCAGT CATCATCAGG AGTACGGATA
 4301 AAATGCTTGA TGGTCGGAAG AGGCATAAAAT TCCGTCAGCC AGTTTAGTCT
 4351 GACCATCTCA TCTGTAACAT CATTGGCAAC GCTACCTTTC CCATGTTCA
 4401 GAAACAACTC TGGCGCATCG GGCTTCCCAT ACAATCGATA GATTGTCGCA
 4451 CCTGATTGCC CGACATTATC GCGAGCCCAT TTATACCCAT ATAAATCAGC
 4501 ATCCATGTTG GAATTAAATC GCGGCCTCGA GCAAGACGTT TCCCCTGAA
 4551 TATGGCTCAT AACACCCCTT GTATTACTGT TTATGTAAGC AGACAGTTT
 4601 ATTGTTCATG ATGATATATT TTATCTTGT GCAATGTAAC ATCAGAGATT
 4651 TTGAGACACA ACGTGGCTT CCCCCCCCCCCC CCATTATTGA AGCATTATC
 4701 AGGGTTATTG TCTCATGAGC GGATAACATAT TTGAATGTAT TTAGAAAAAT
 4751 AAACAAATAG GGGTCCCGCG CACATTCCC CGAAAAGTGC CACCTGACGT
 4801 CTAAGAAACC ATTATTATCA TGACATTAAC CTATAAAAT AGGCGTATCA
 4851 CGAGGCCCTT TCGTC

Figure 8: CMVintaBGH Sequence, SEQ. ID:11:

1 ATTGGCTATT GGCCATTGCA TACGTTGTAT CCATATCATA ATATGTACAT
 51 TTATATTGGC TCATGTCCAA CATTACCGCC ATGTTGACAT TGATTATTGA
 101 CTAGTTATTA ATAGTAATCA ATTACGGGGT CATTAGTTCA TAGCCCATAT
 151 ATGGAGTTCC GCGTTACATA ACTTACGGTA AATGGCCCGC CTGGCTGACC
 201 GCCCAACGAC CCCCCCCCCT TGACGTCAAT AATGACGTAT GTTCCCATAG
 251 TAACGCCAAT AGGGACTTTTC CATTGACGTC AATGGGTGGA GTATTTACGG
 301 TAAACTGCCC ACTTGGCAGT ACATCAAGTG TATCATATGC CAAGTACGCC
 351 CCCTATTGAC GTCAATGACG GTAAATGCC CGCCTGGCAT TATGCCAGT
 401 ACATGACCTT ATGGGACTTT CCTACTTGGC AGTACATCTA CGTATTAGTC
 451 ATCGCTATTA CCATGGTGT GCGGTTTGG CAGTACATCA ATGGGCGTGG
 501 ATAGCGGTTT GACTCACGGG GATTCCAAG TCTCCACCCCC ATTGACGTCA
 551 ATGGGAGTTT GTTTGGCAC CAAAATCAAC GGGACTTTCC AAAATGTCGT
 601 AACAACTCCG CCCCATTGAC GCAAATGGGC GGTAGGCGTG TACGGTGGGA
 651 GGTCTATATA AGCAGAGCTC GTTTAGTGAA CCGTCAGATC GCCTGGAGAC
 701 GCCATCCACG CTGTTTGAC CTCCATAGAA GACACCGGGGA CCGATCCAGC
 751 CTCCGCGGCC GGGAACGGTG CATTGGAACG CGGATTCCCC GTGCCAAGAG
 801 TGACGTAAGT ACCGCCTATA GAGTCTATAG GCCCACCCCC TTGGCTTCTT
 851 ATGCATGCTA TACTGTTTT GGCTGGGGT CTATACACCC CGCTTCCCTC
 901 ATGTTATAGG TGATGGTATA GCTTAGCTA TAGGTGTGGG TTATTGACCA
 951 TTATTGACCA CTCCCCATT GGTGACGATA CTTCCATT A CTAATCCATA
 1001 ACATGGCTCT TTGCCACAAAC TCTCTTATT GGCTATATGC CAATACACTG
 1051 TCCCTCAGAG ACTGACACGG ACTCTGTATT TTACAGGAT GGGGTCTCAT
 1101 TTATTATTAA CAAATTACACA TATAACACAC CACCGTCCCC AGTGCCCGCA
 1151 GTTTTATTAA AACATAACGT GGGATCTCCA CGCGAATCTC GGGTACGTGT
 1201 TCGGACATG GGCTCTCTC CGGTAGCGGC GGAGCTTCTA CATCCGAGCC

Figure 8 (continued, p2/2)

1251 CTGCTCCCAT GCCTCCAGCG ACTCATGGTC GCTCGGCAGC TCCCTGCTCC
1301 TAACAGTGGA GGCCAGACTT AGGCACAGCA CGATGCCAC CACCACCACT
1351 GTGCCGCACA AGGCCGTGGC GGTAGGGTAT GTGTCTGAAA ATGAGCTCGG
1401 GGAGCGGGCT TGACACOGCTG ACGCATTGG AAGACTTAAG GCAGCGGCAG
1451 AAGAAGATGC AGGCAGCTGA GTTGTGTGT TCTGATAAGA GTCAGAGGTA
1501 ACTCCCGTTG CGGTGCTGTT AACGGTGGAG GGCAGTGTAG TCTGAGCAGT
1551 ACTCGTTGCT GCCGCGCGCG CCACCAGACA TAATAGCTGA CAGACTAAC
1601 GACTGTTCTT TTCCATGGGT CTTTCTGCA GTCACCGTCC TTAGATCTG
1651 CTGTGCCTTC TAGTTGCCAG CCATCTGTTG TTGCCCCCTC CCCC GTGCCT
1701 TCCTTGACCC TGGAAGGTGC CACTCCCCT GTCCTTTCTT AAAAAATGA
1751 GGAAATTGCA TCGCATTGTC TGAGTAGGTG TCATTCTATT CTGGGGGGTG
1801 GGGTGGGGCA GCACAGCAAG GGGGAGGATT GGGAAAGACAA TAGCAGGCAT
1851 GCTGGGGATG CGGTGGGCTC TATGGGTACC CAGGTGCTGA AGAATTGACC
1901 CGGTTCTCC TGGGCCAGAA AGAAGCAGGC ACATCCCCCTT CTCTGTGACA
1951 CACCCCTGTCC ACGCCCCCTGG TTCTTAGTTC CAGCCCCACT CATAGGACAC
2001 TCATAGCTCA GGAGGGCTCC GCCTTCAATC CCACCCGCTA AAGTACTTGG
2051 AGCGGTCTCT CCCTCCCCCTCA TCAGCCCCACC AAACCAAACCC TAGCCTCCAA
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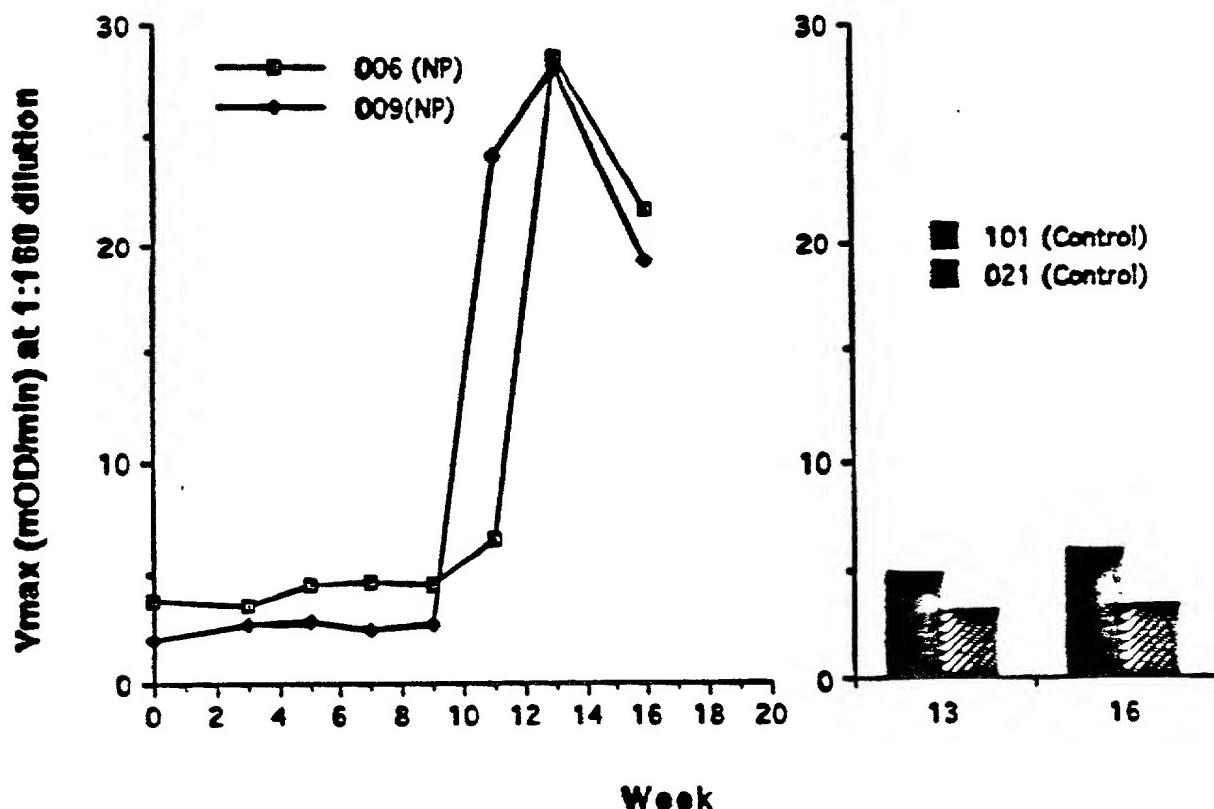
FIGURE 9**Anti-Nucleoprotein antibody in monkeys
injected with pn-RSV-NP**

FIGURE 10

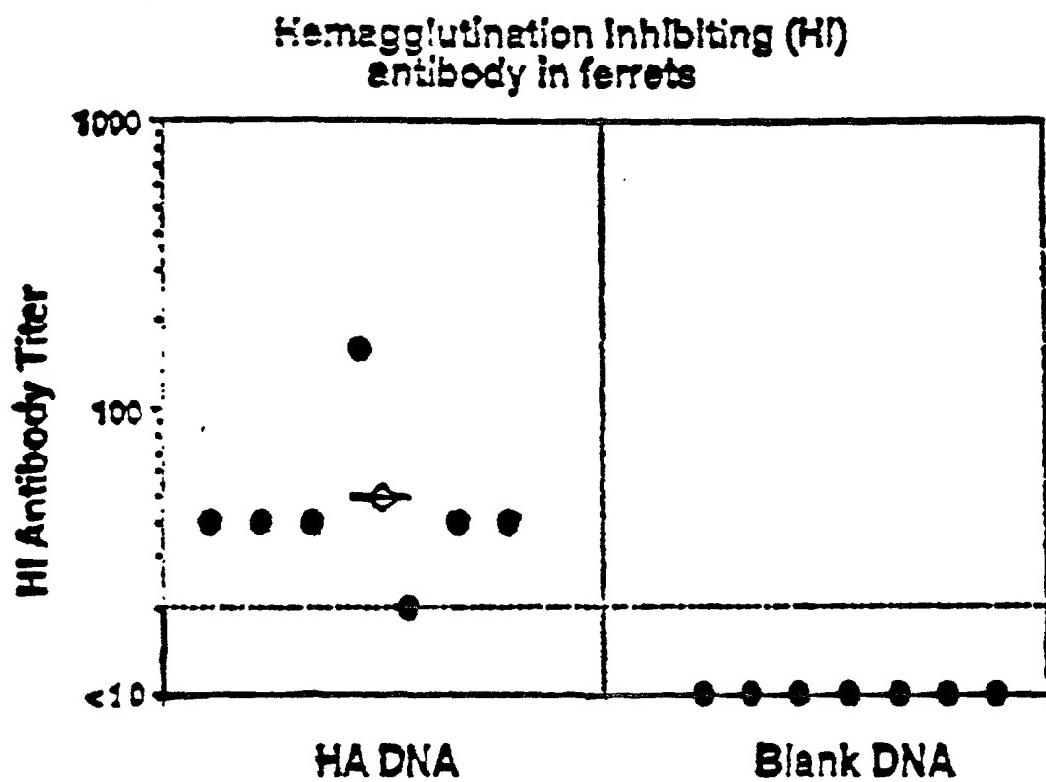


FIGURE 11

IgG anti-NP antibody in ferrets after
DNA immunization

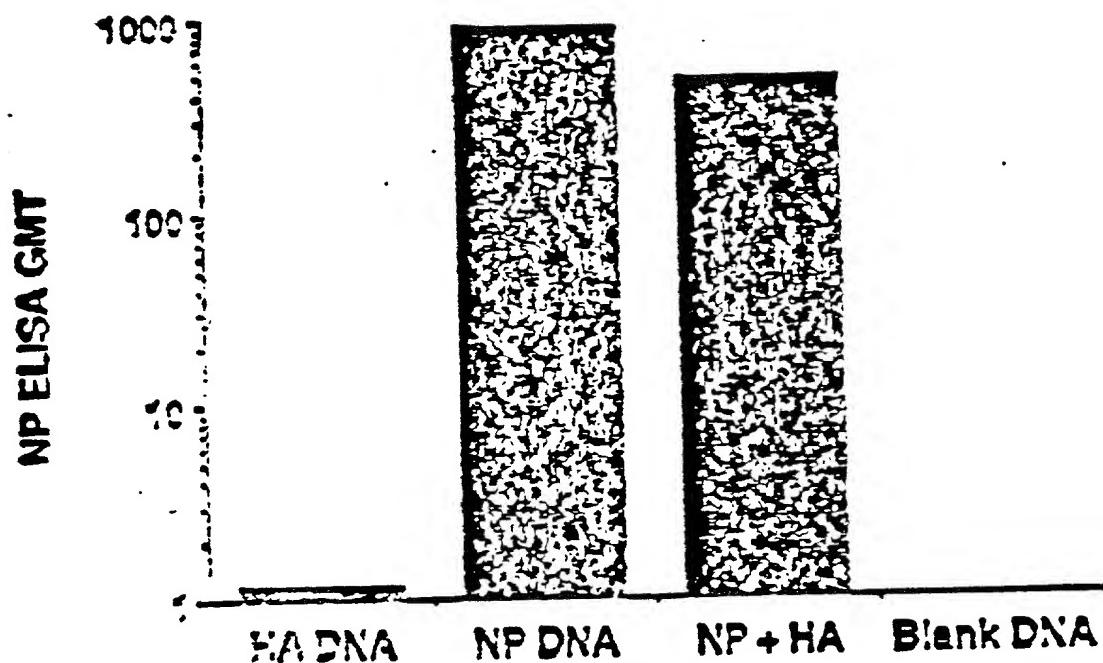
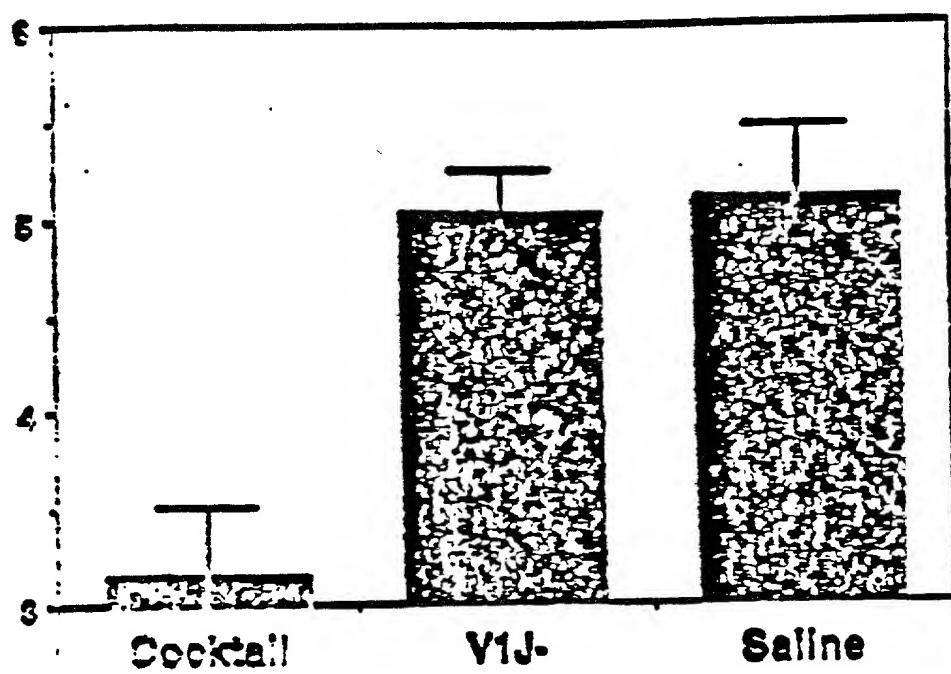


FIGURE 12
Viral shedding in ferrets

Mean Log Nasal Wash Infectivity \pm SEM



Mean Log Nasal Wash Infectivity \pm SEM

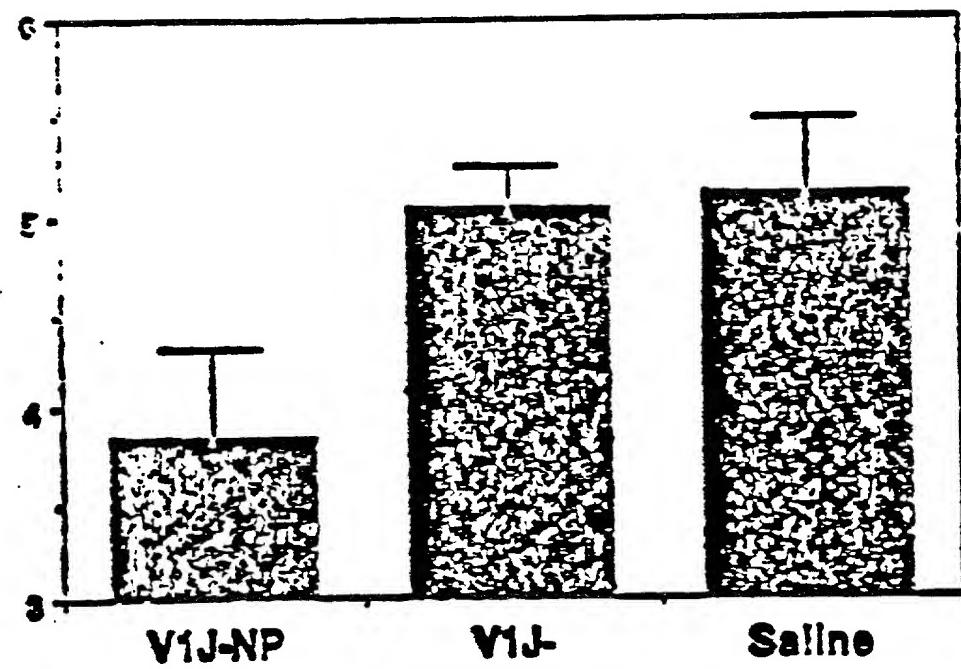


FIGURE 13

PLASMID DNA CONSTRUCTS

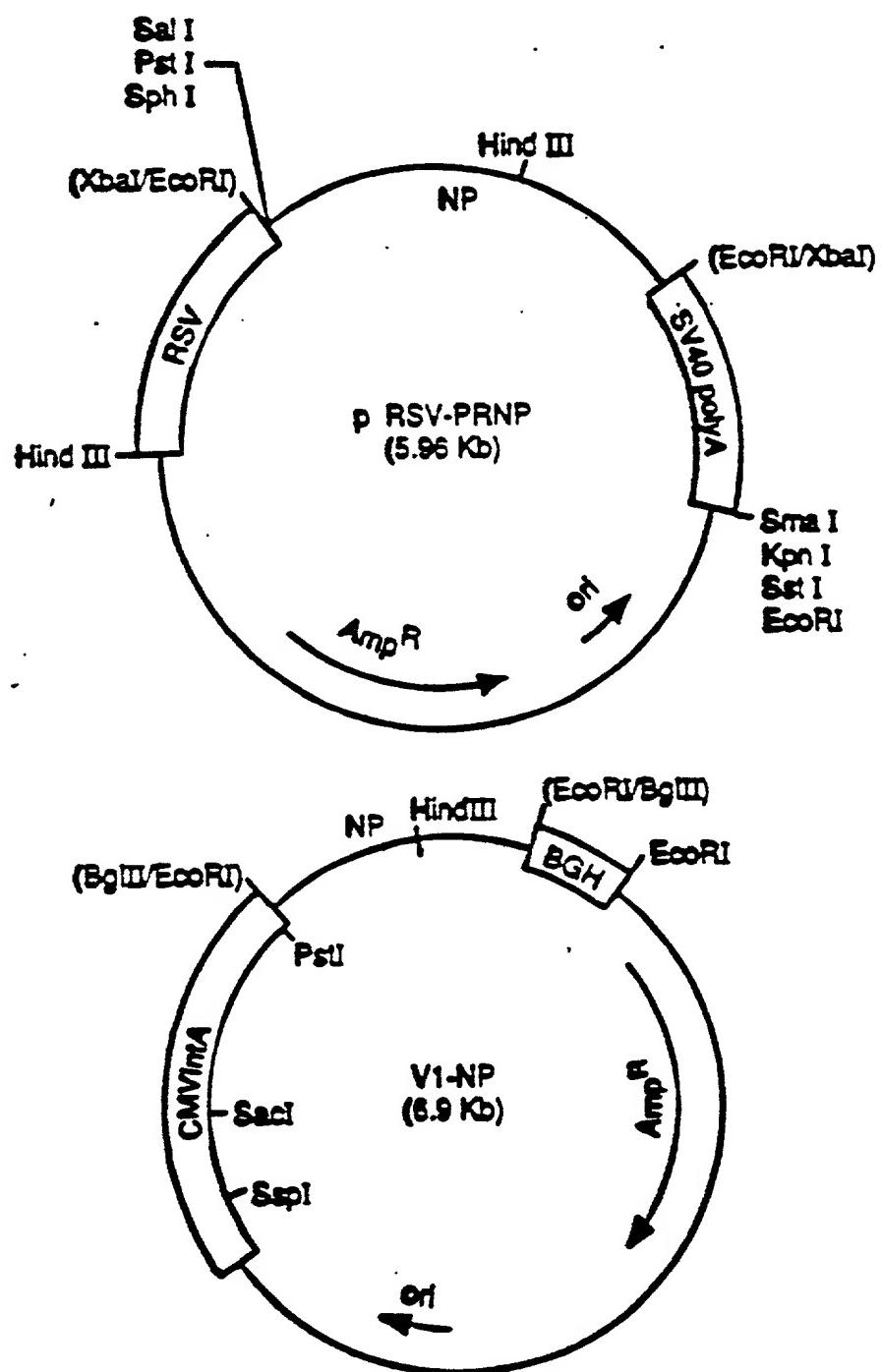
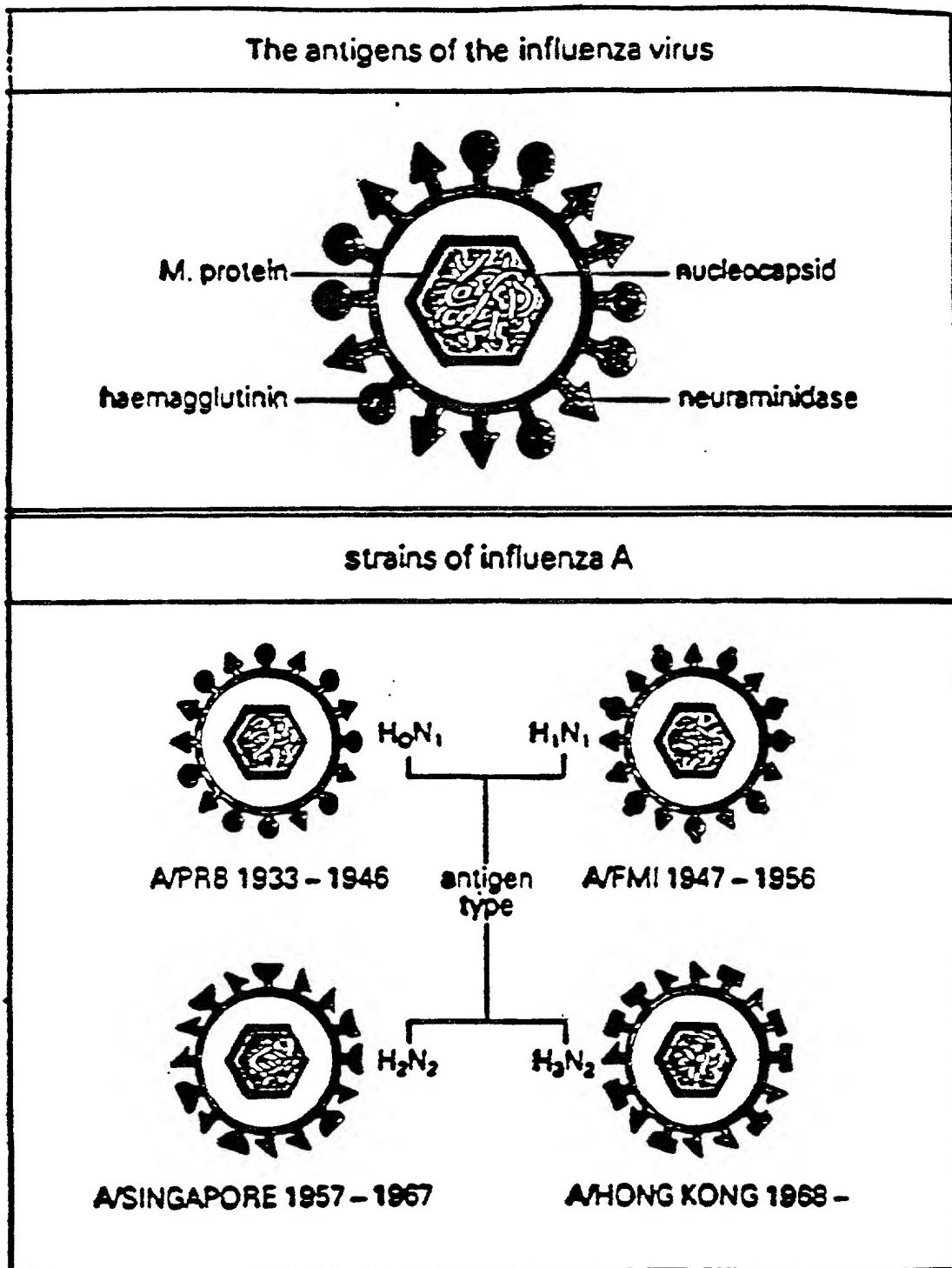


FIGURE 14

INJECTION OF DNA ENCODING A VIRAL PROTEIN GENERATES KILLER T CELLS

FIGURE 15

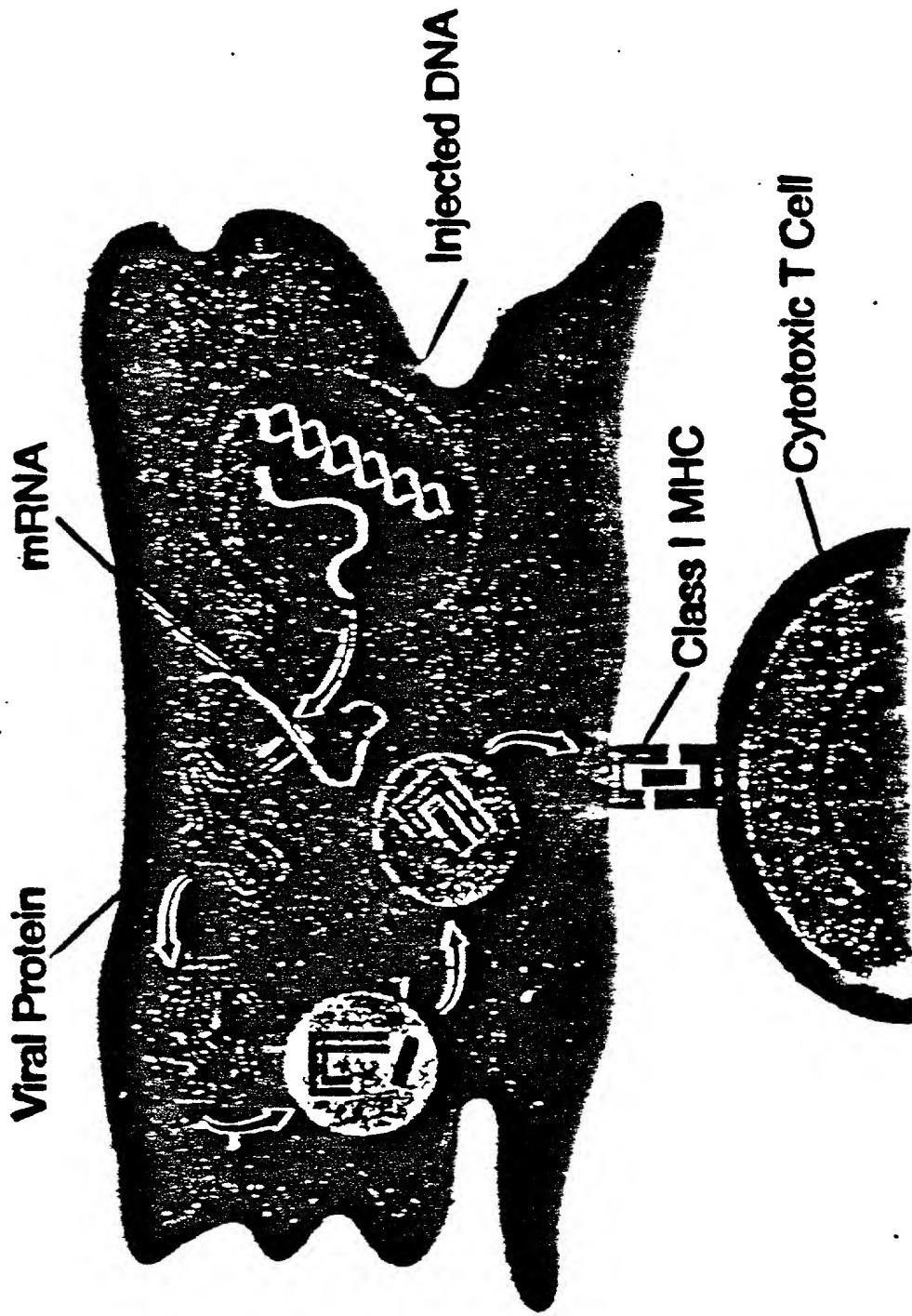


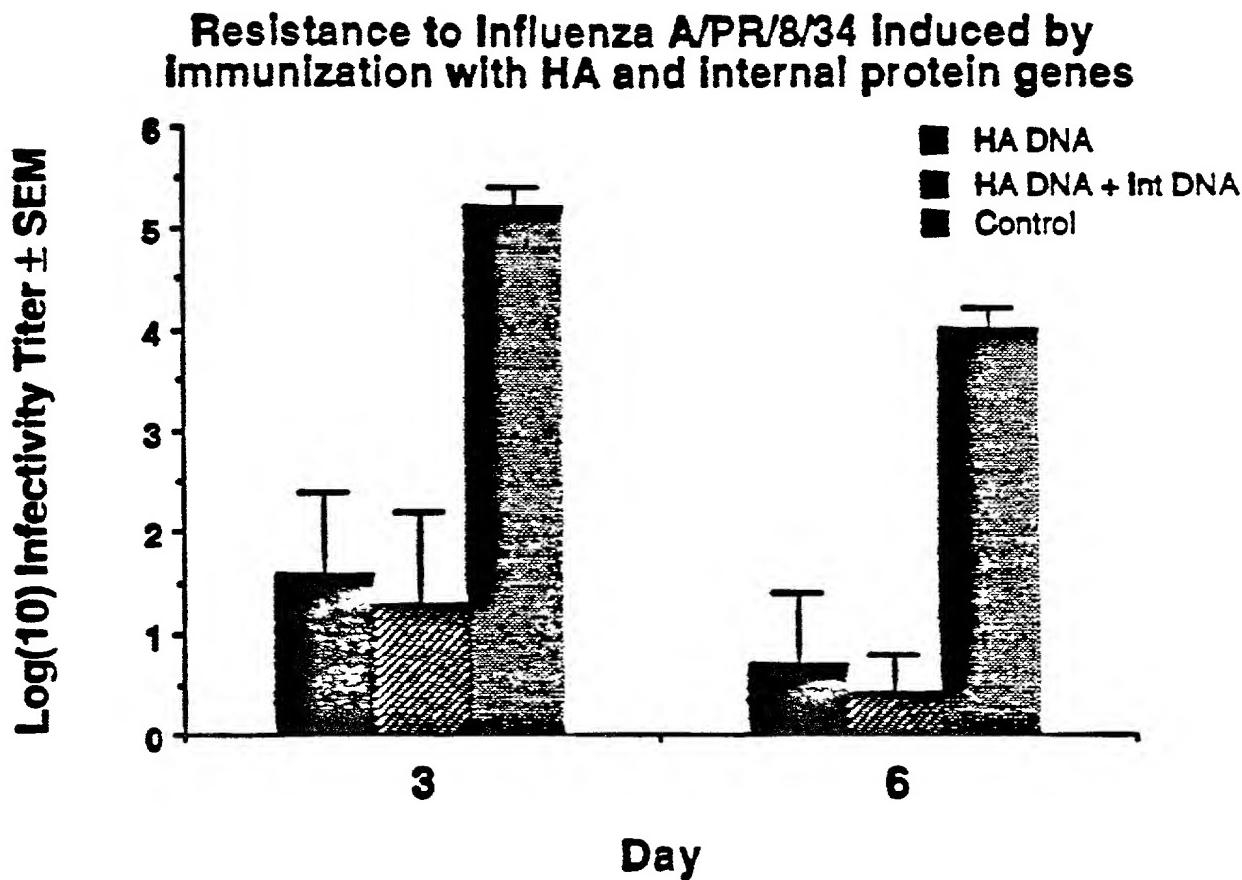
Figure 16

FIGURE 17

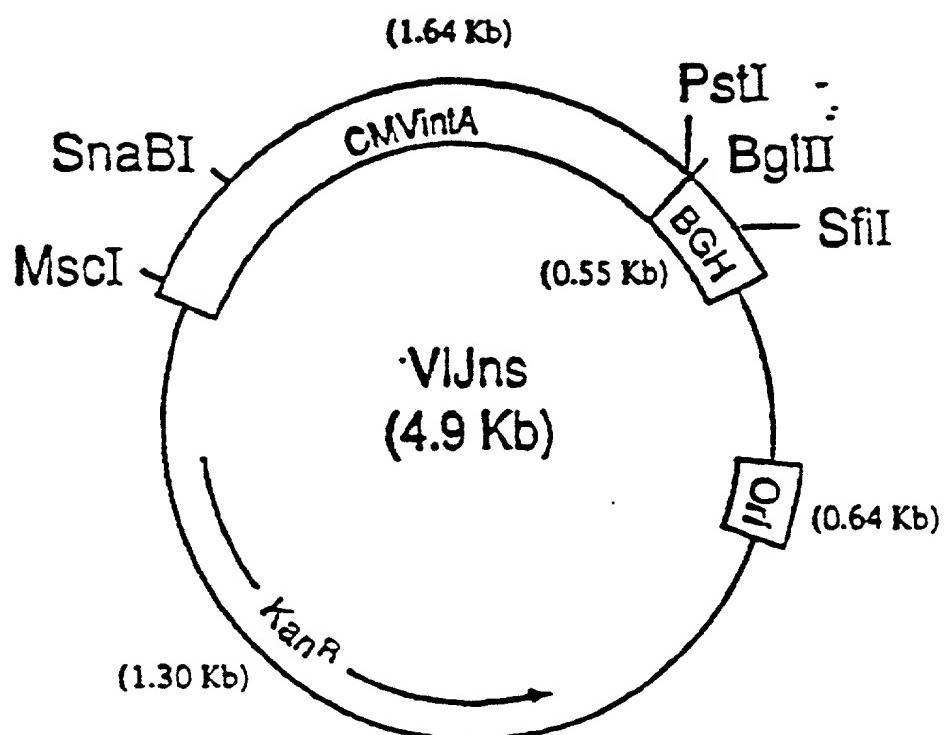


Figure 18

**Immunogenicity and Duration of Response
in African Green Monkeys**

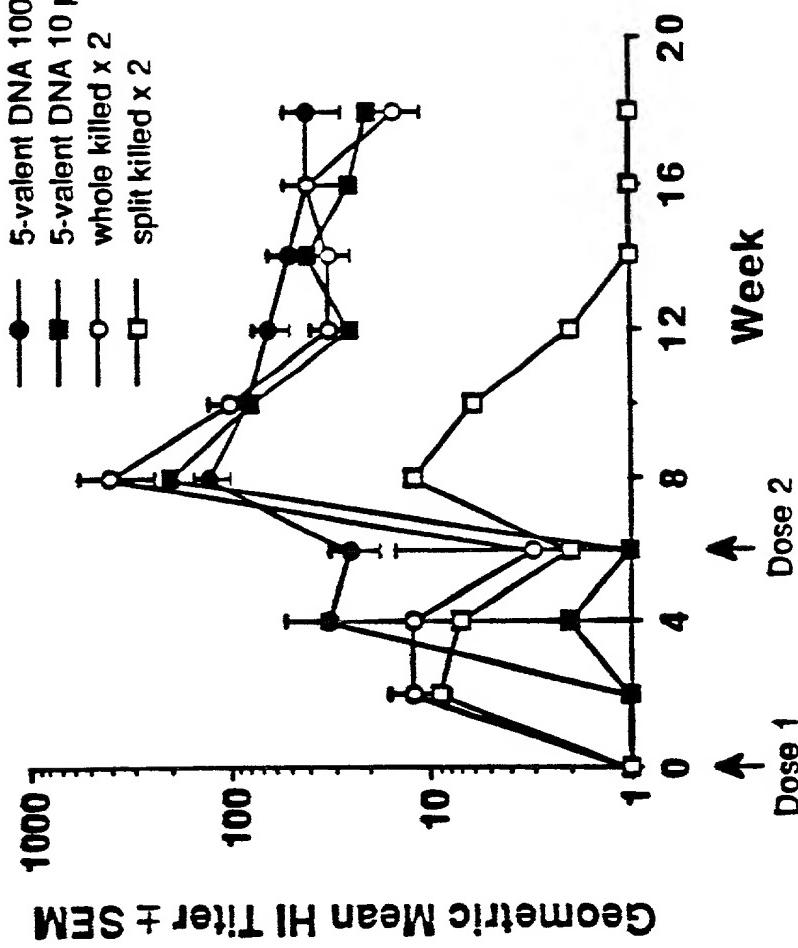


Figure 19

Cytotoxic T Cells 6 Months After Immunization with NP DNA

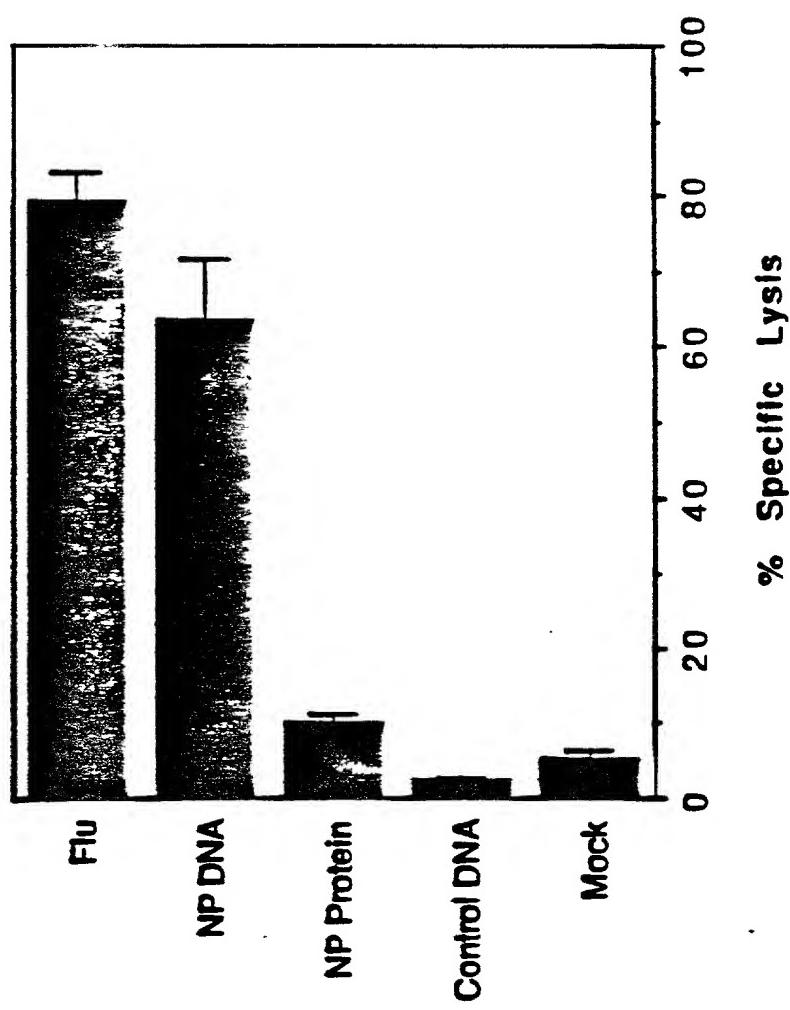


Figure 20

Expression of NP by Muscle Cells In Vivo is Sufficient for Generation of CTL

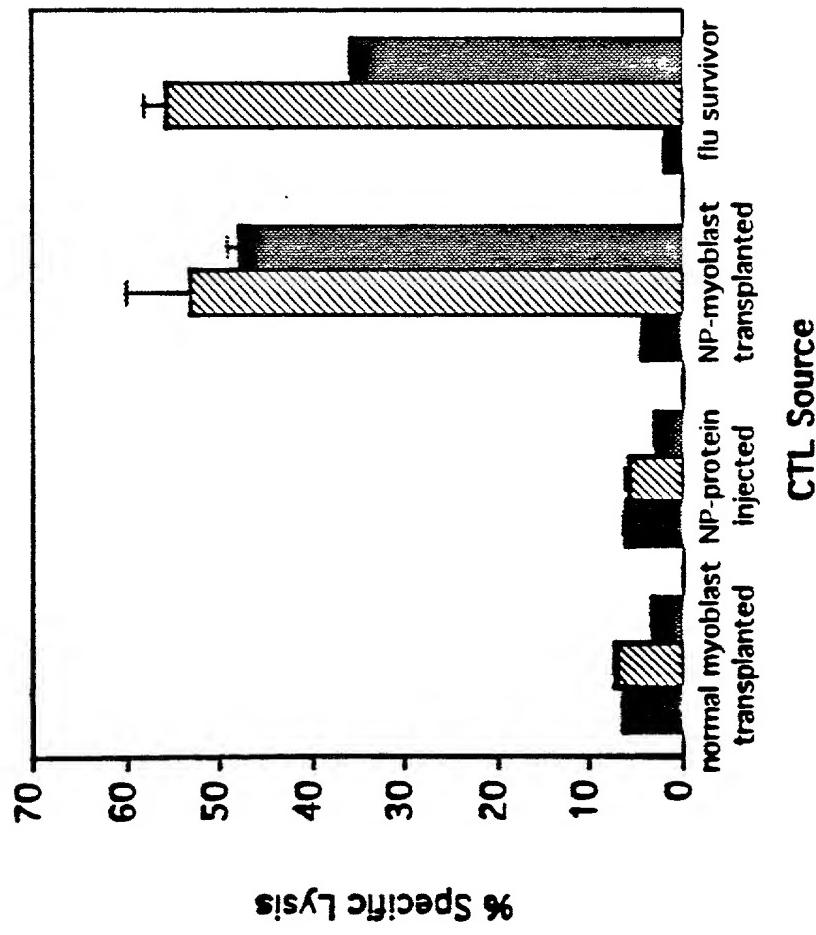


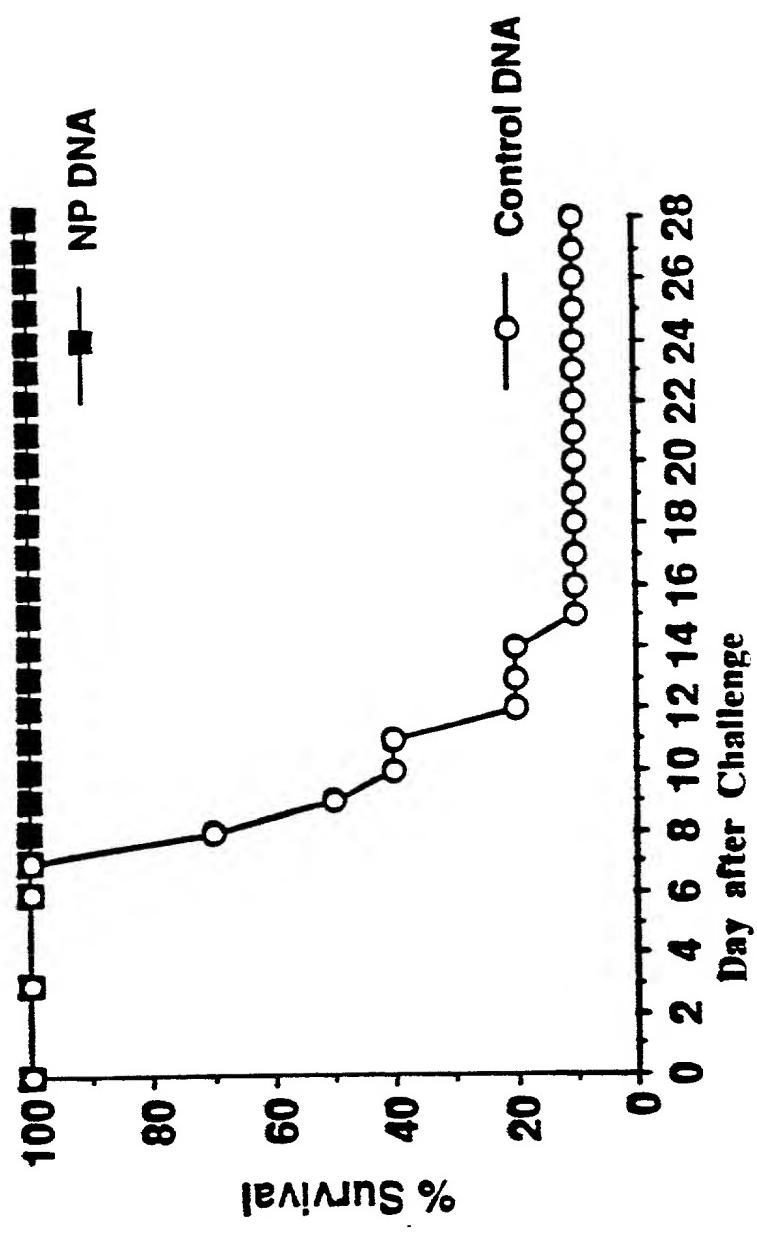
Figure 21**Protection of mice from heterologous A/HK/68 challenge by immunization with NP DNA**

Figure 22
Protection from weight loss during heterologous challenge with A/HK/68 by immunization with NP DNA

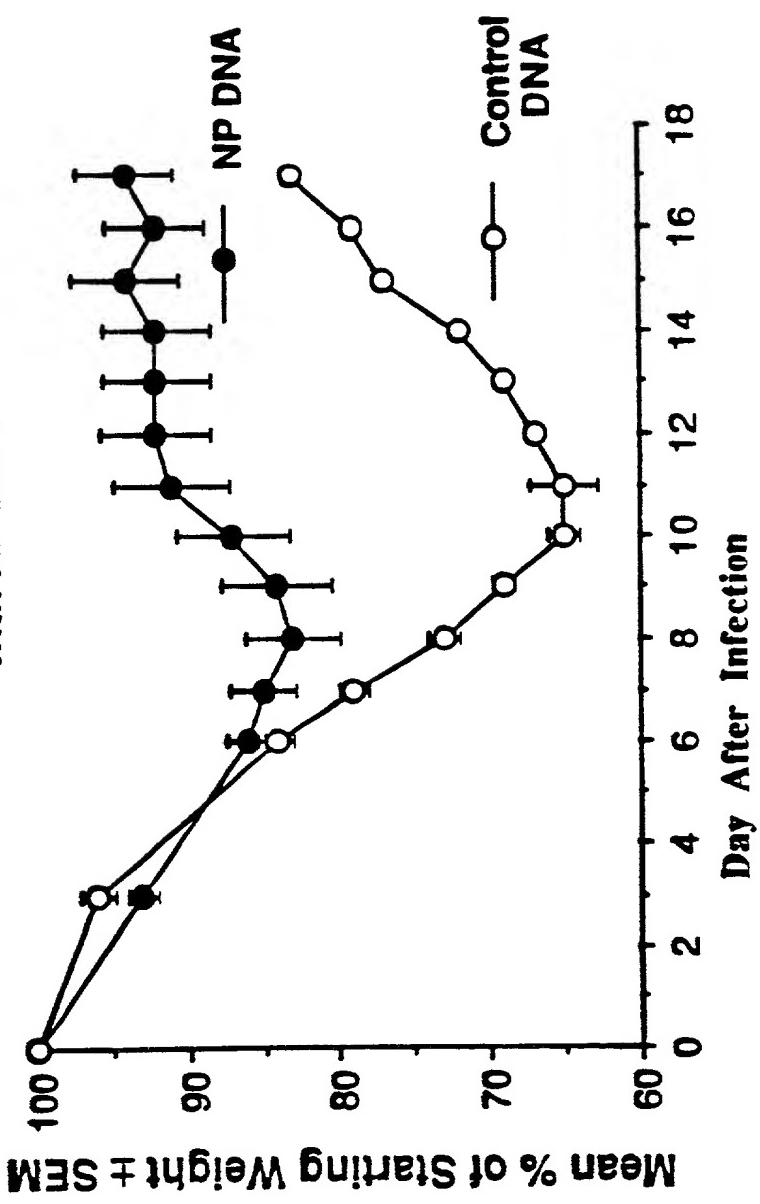


Figure 23

Reduction of viral lung titers following challenge with A/HK/68 by immunization with NP DNA

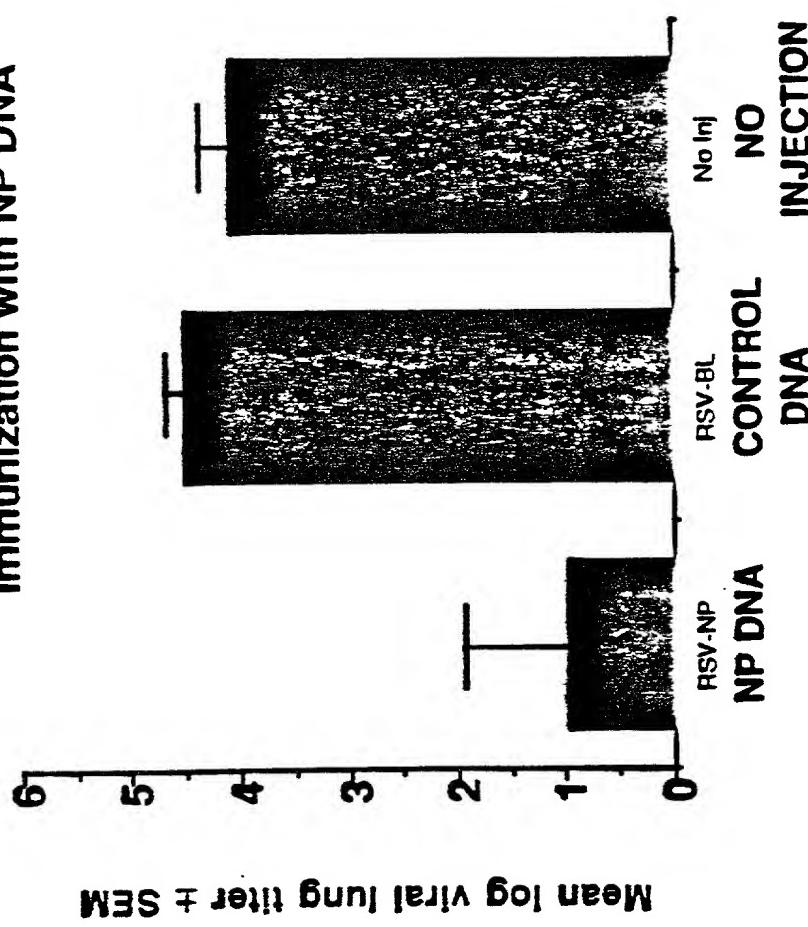
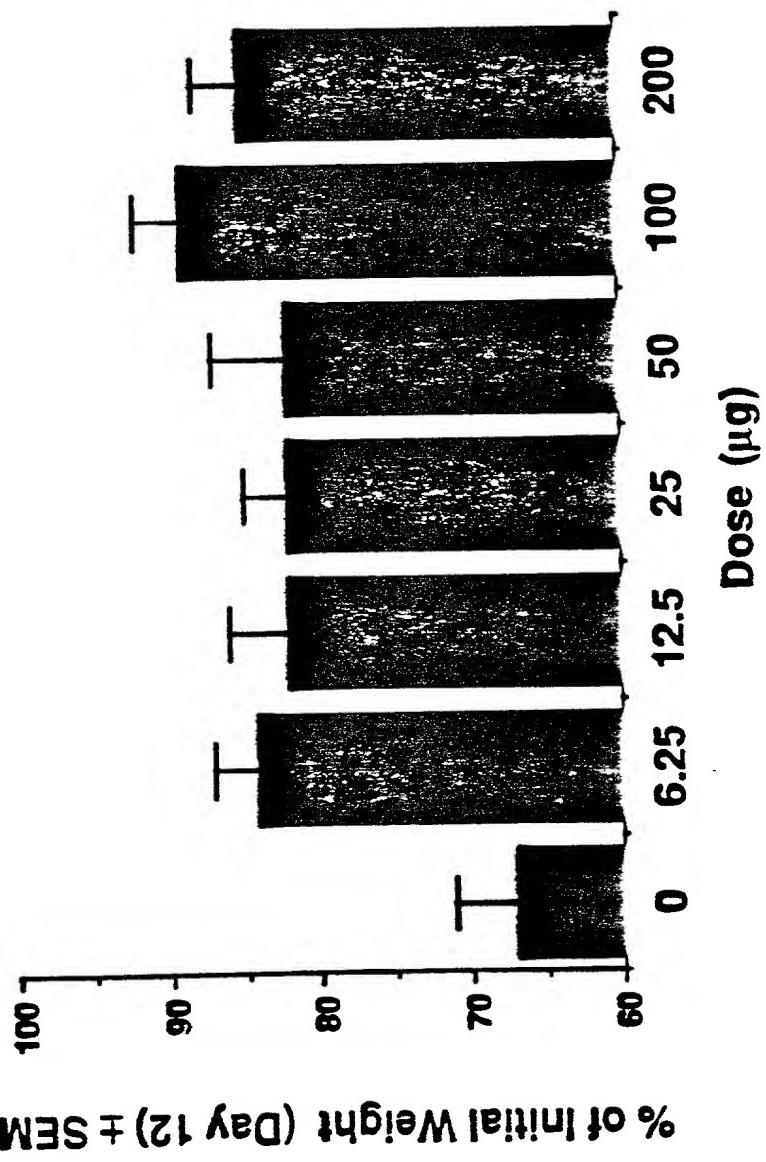


Figure 24**Dose-response for protection from weight loss by immunization with NP DNA**

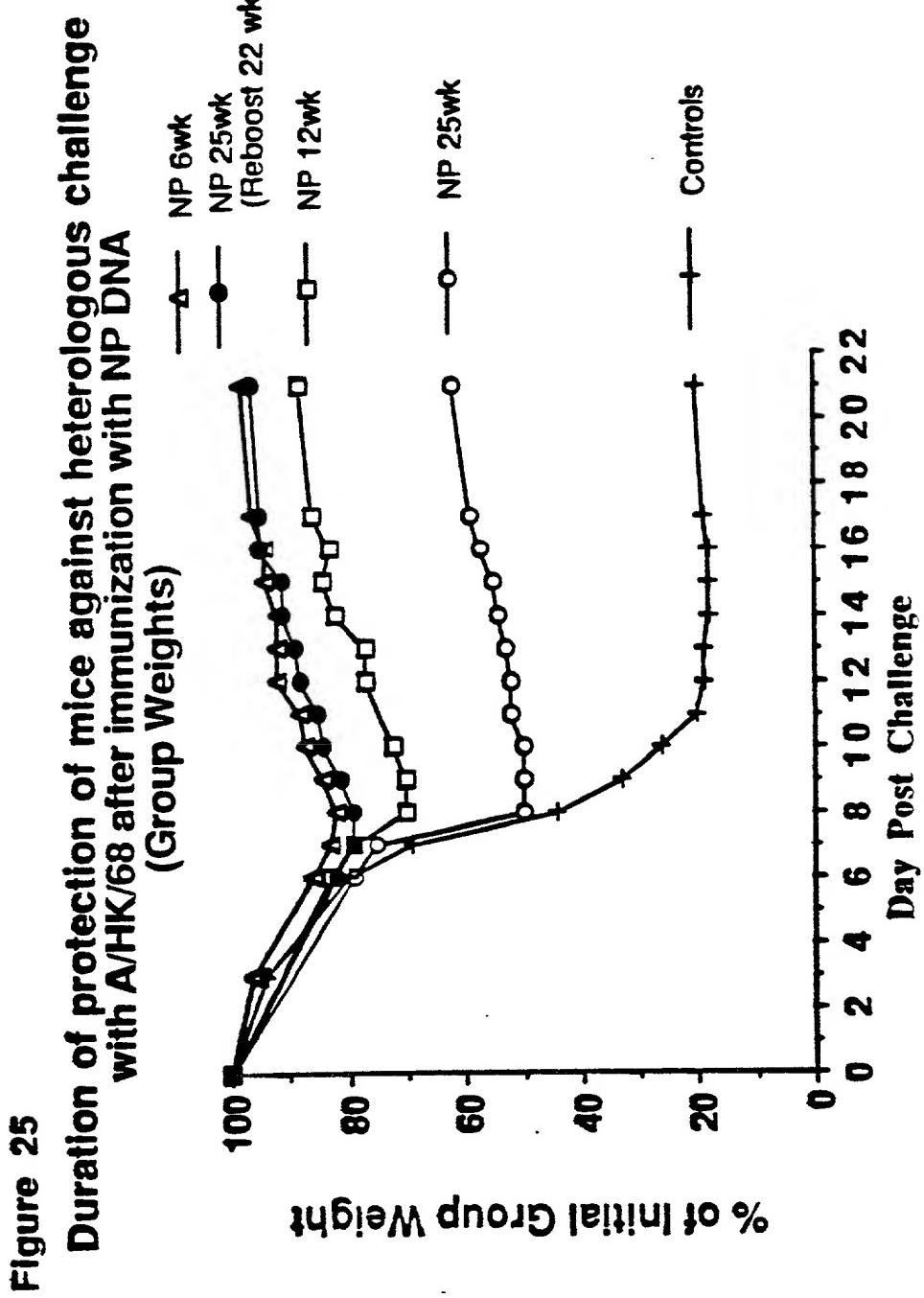


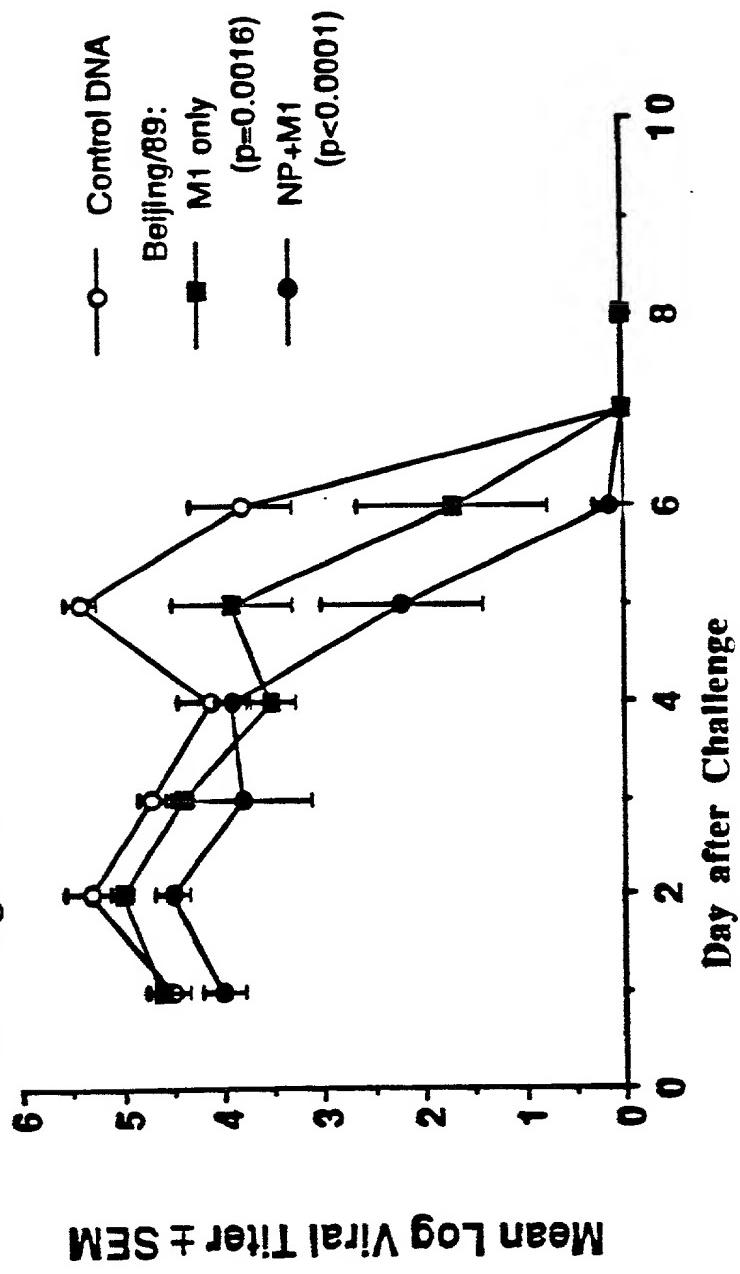
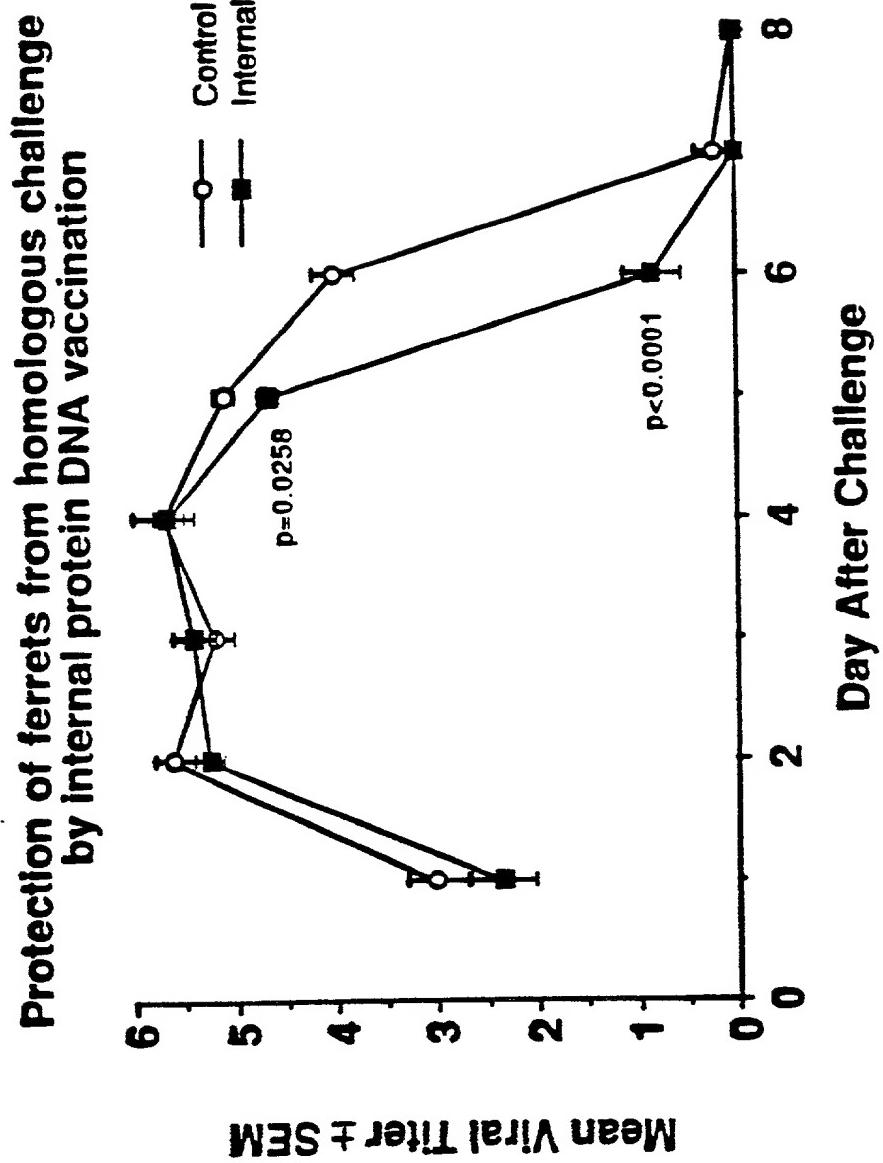
Figure 26**Cell-mediated protection in ferrets after challenge with a drifted strain (A/Georgia/93)**

Figure 27

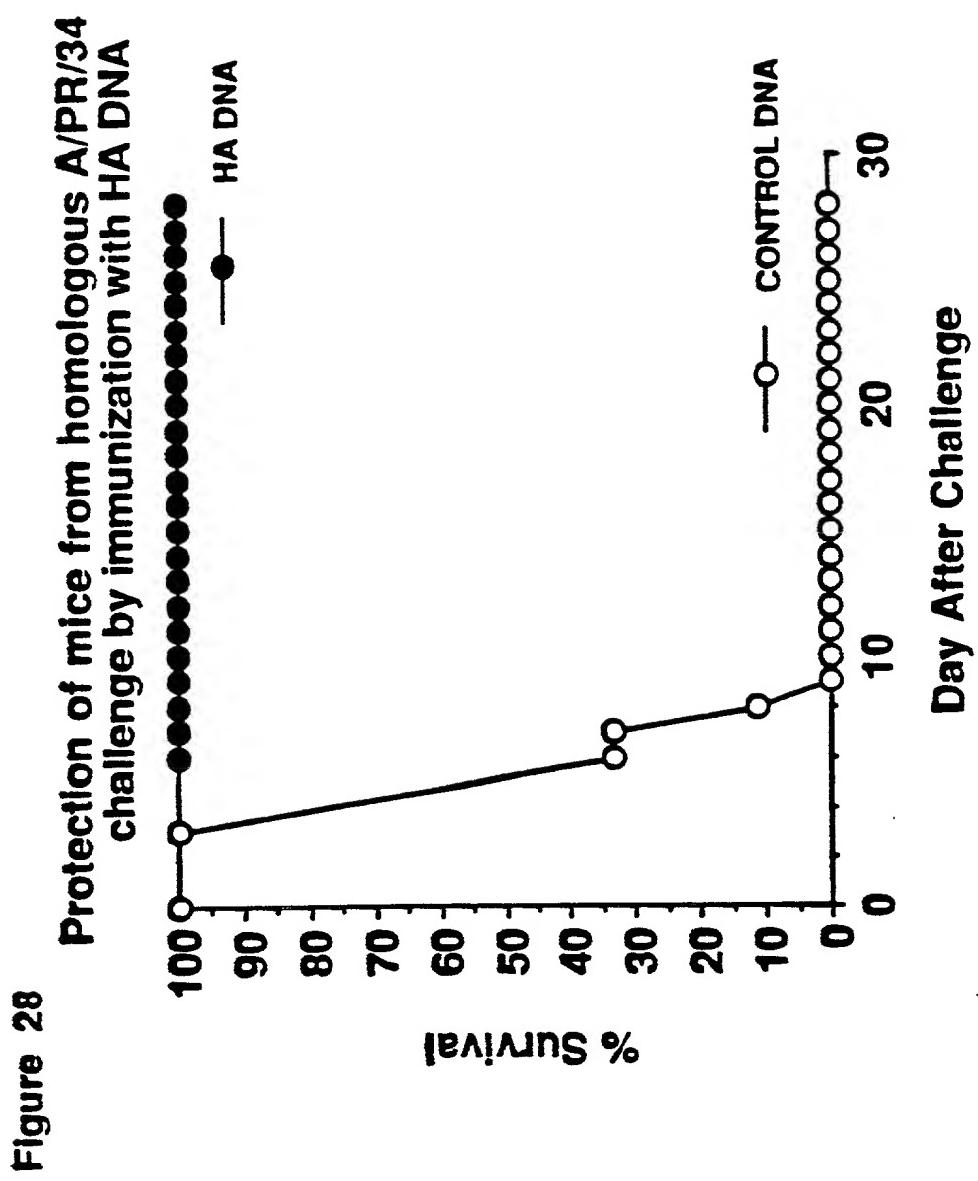
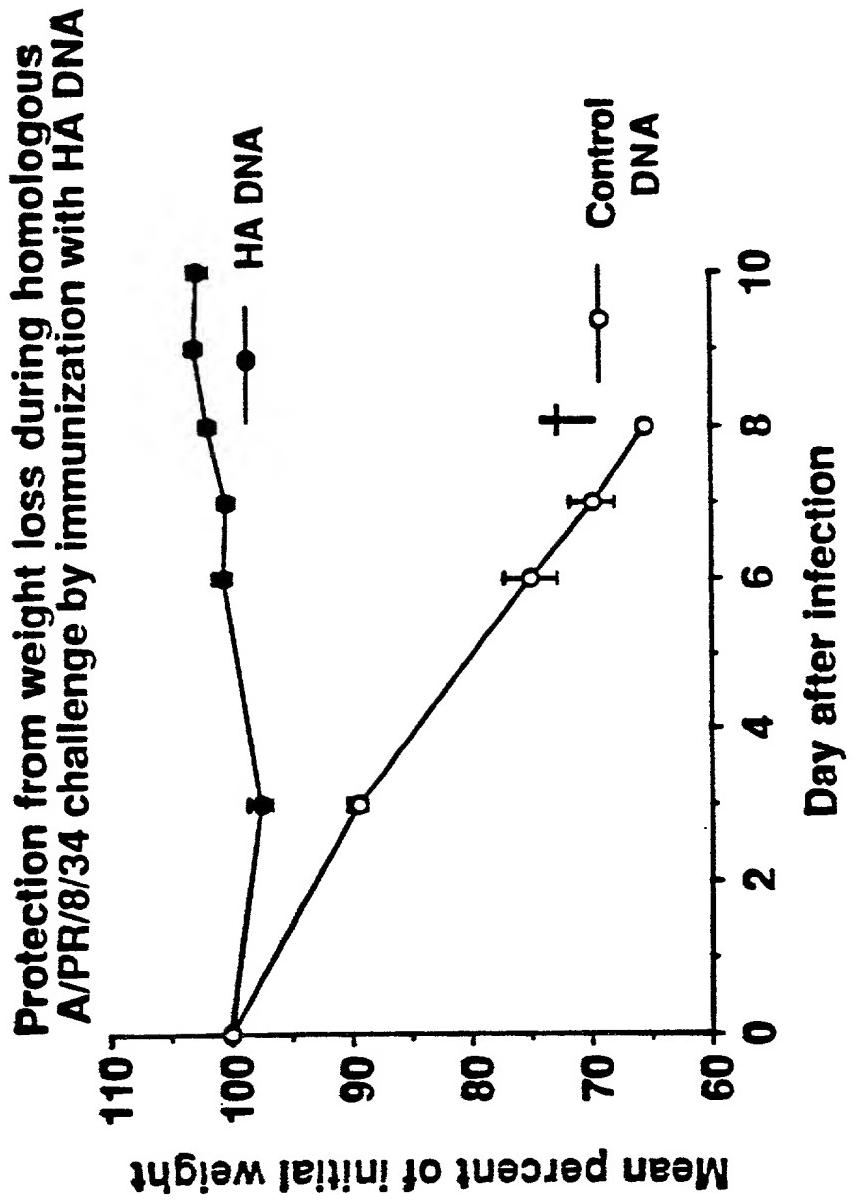


Figure 2g



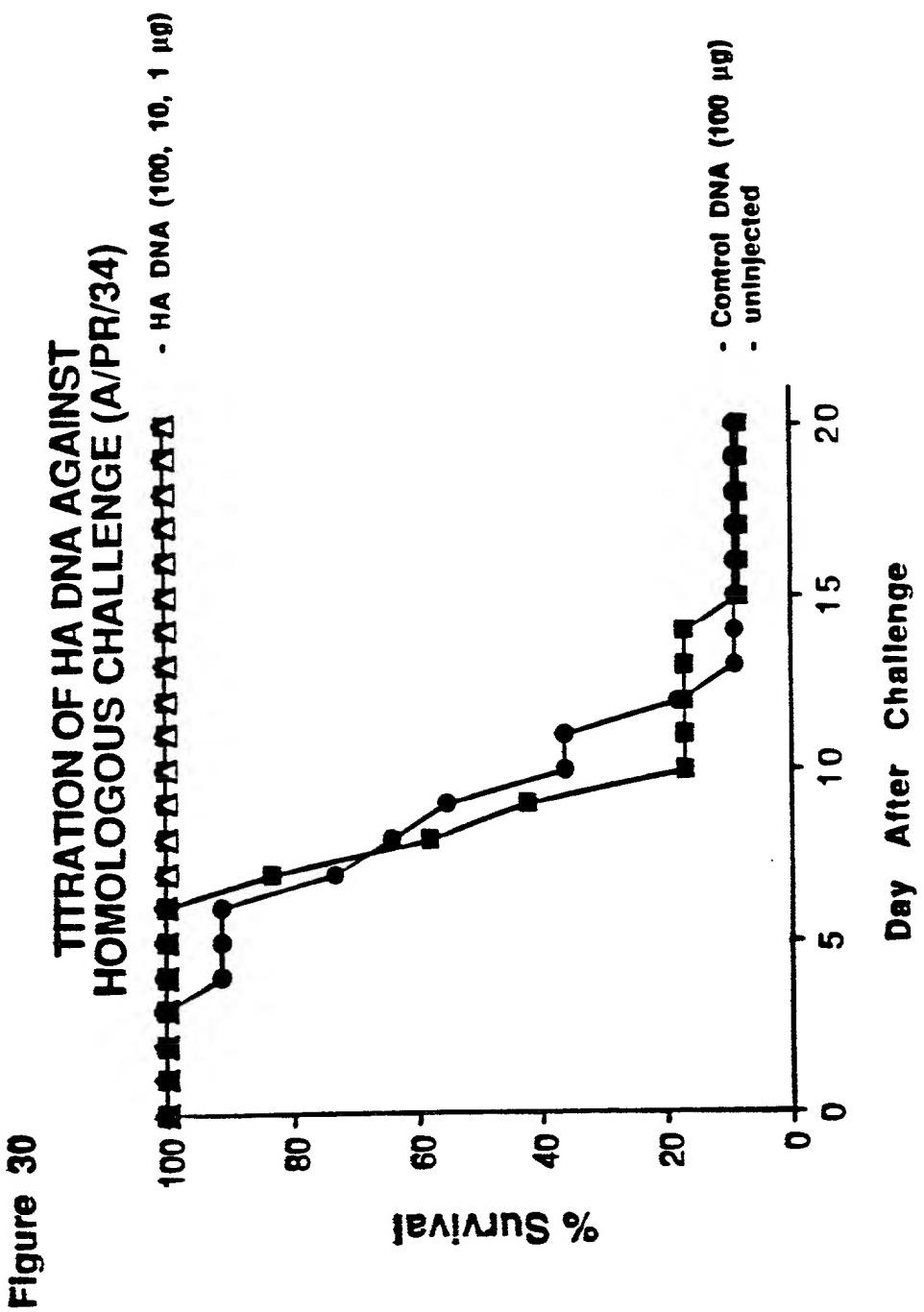
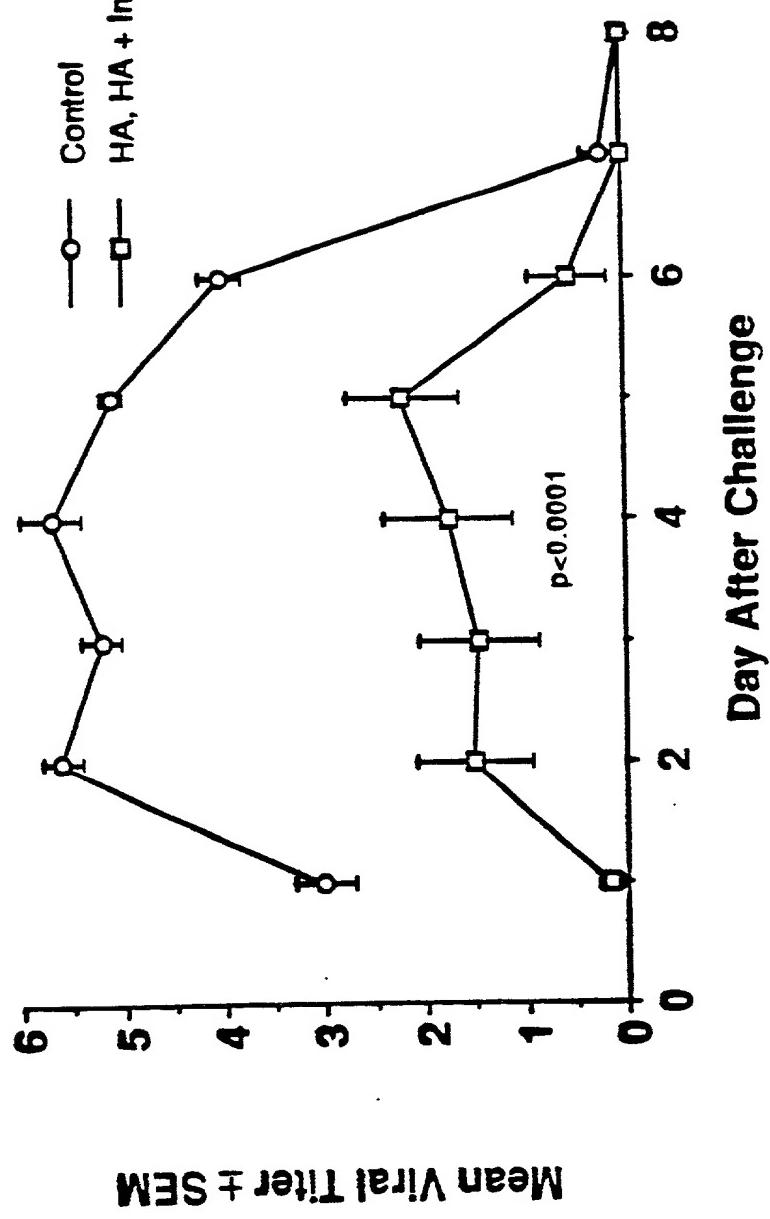
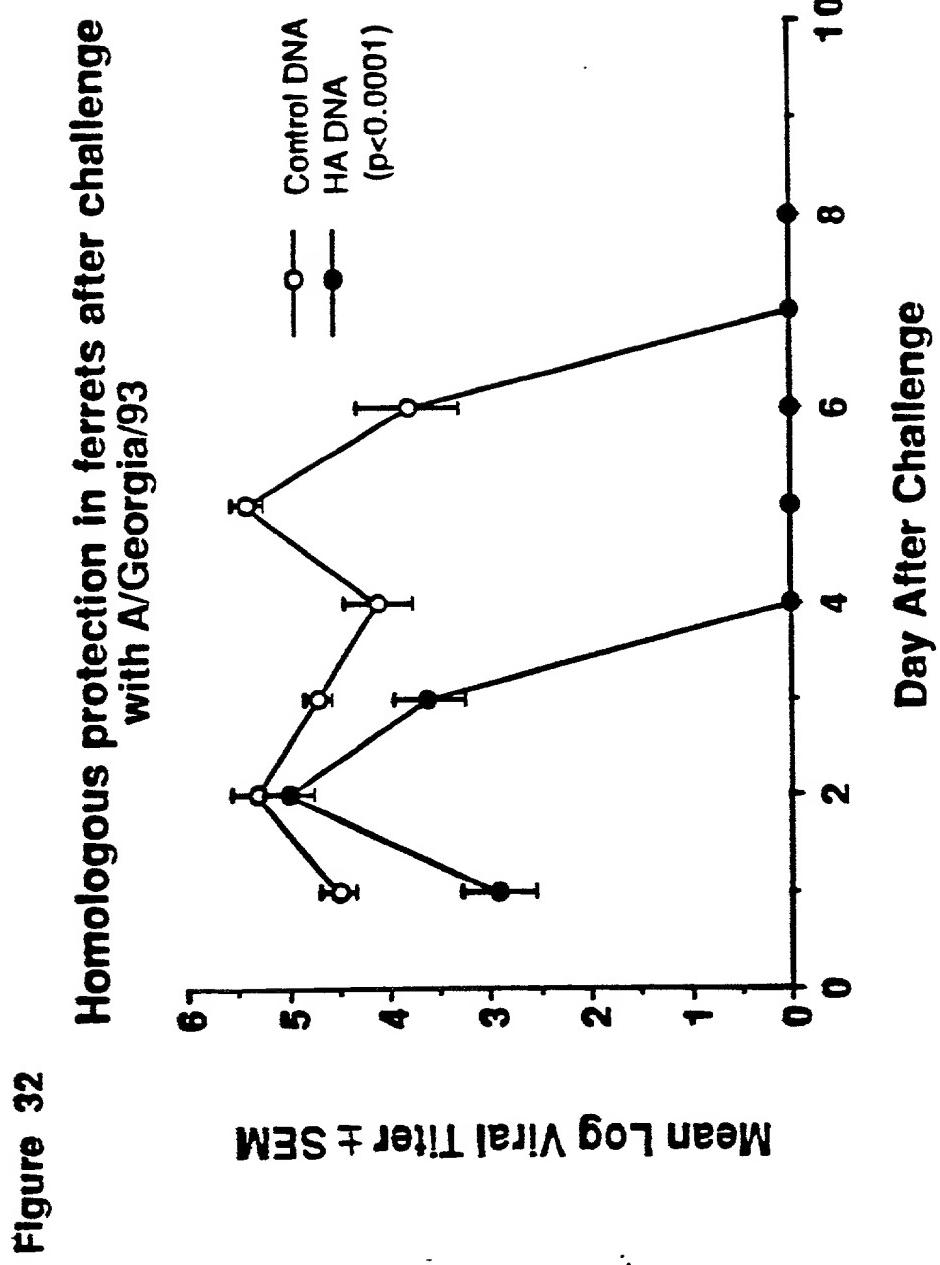


Figure 31**Protection of ferrets from homologous challenge by HA DNA vaccination**



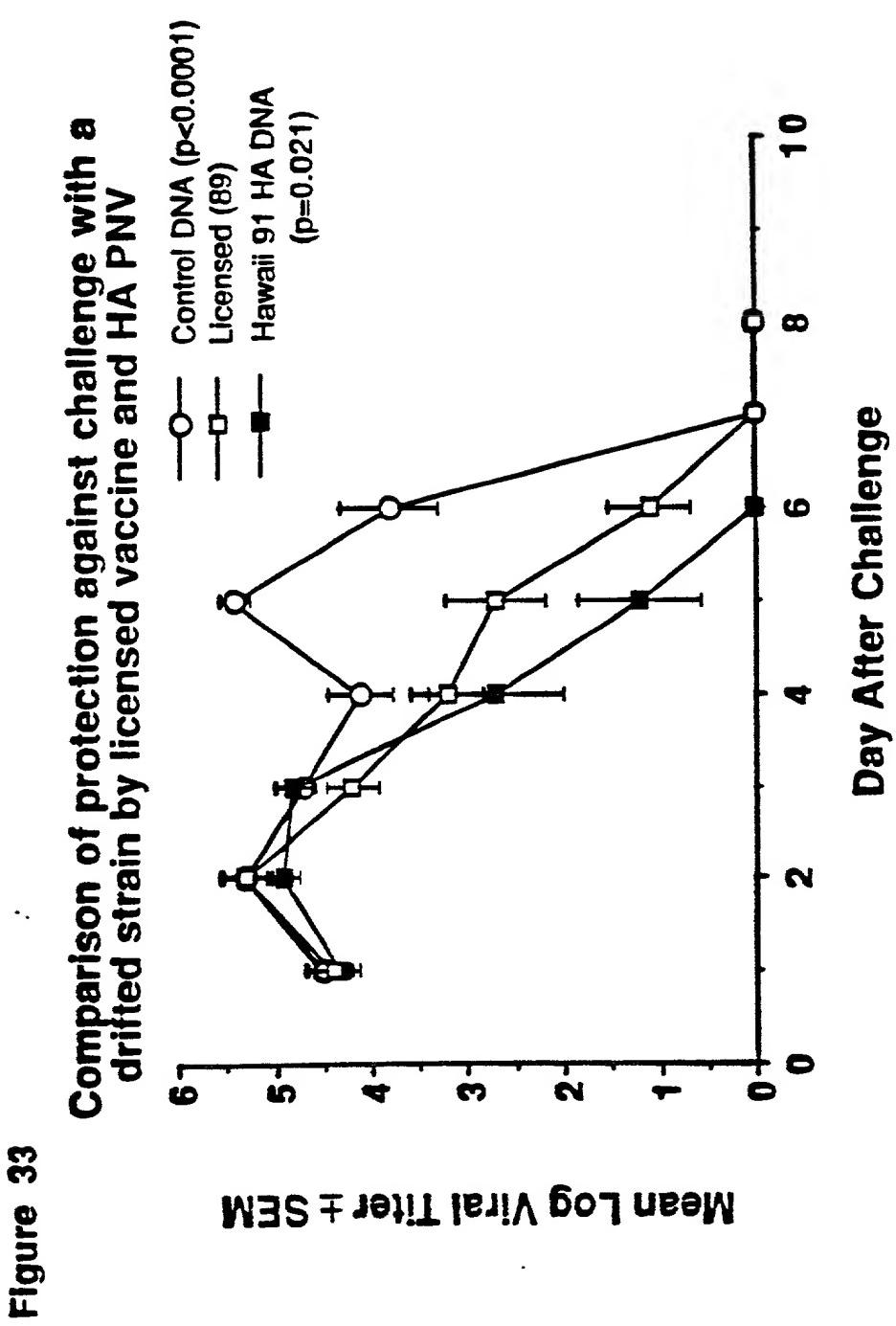


Figure 34
Comparison of PNV with licensed vaccine in ferrets after challenge with a drifted strain (A/Georgia/93)

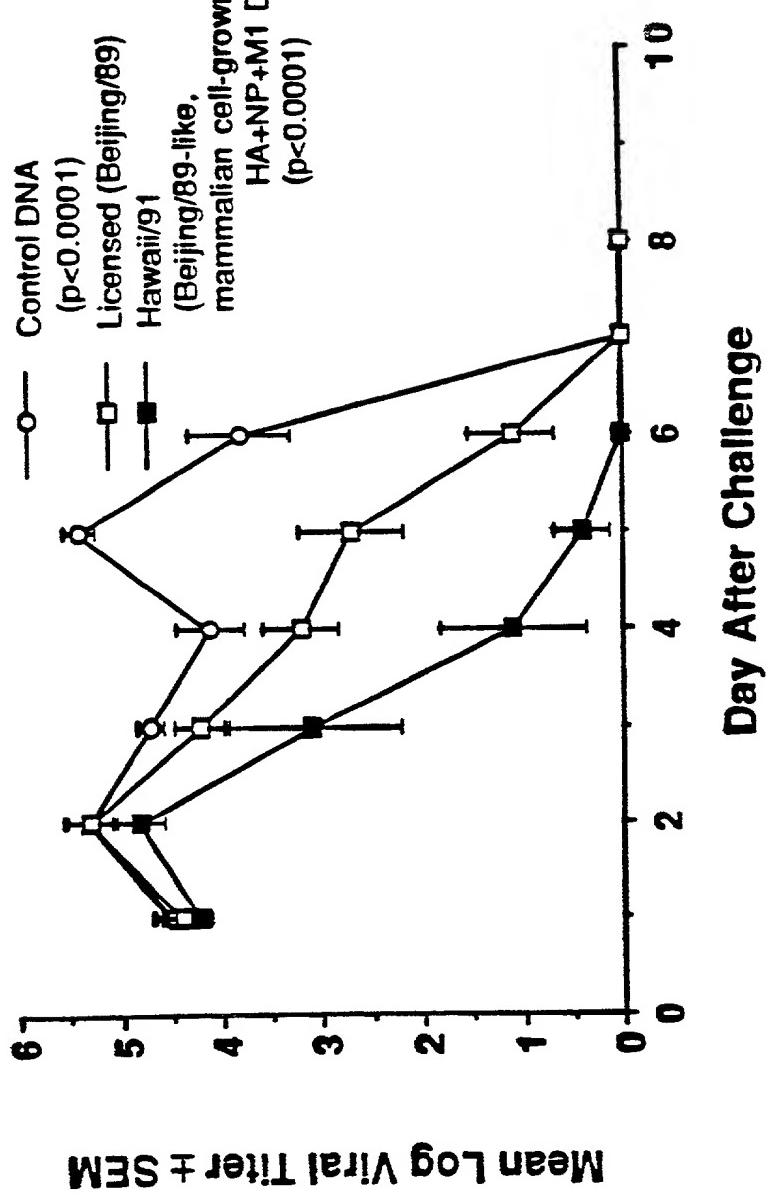


Figure 35

PNV provides equivalent protection to homologous HA DNA against an antigenically drifted strain

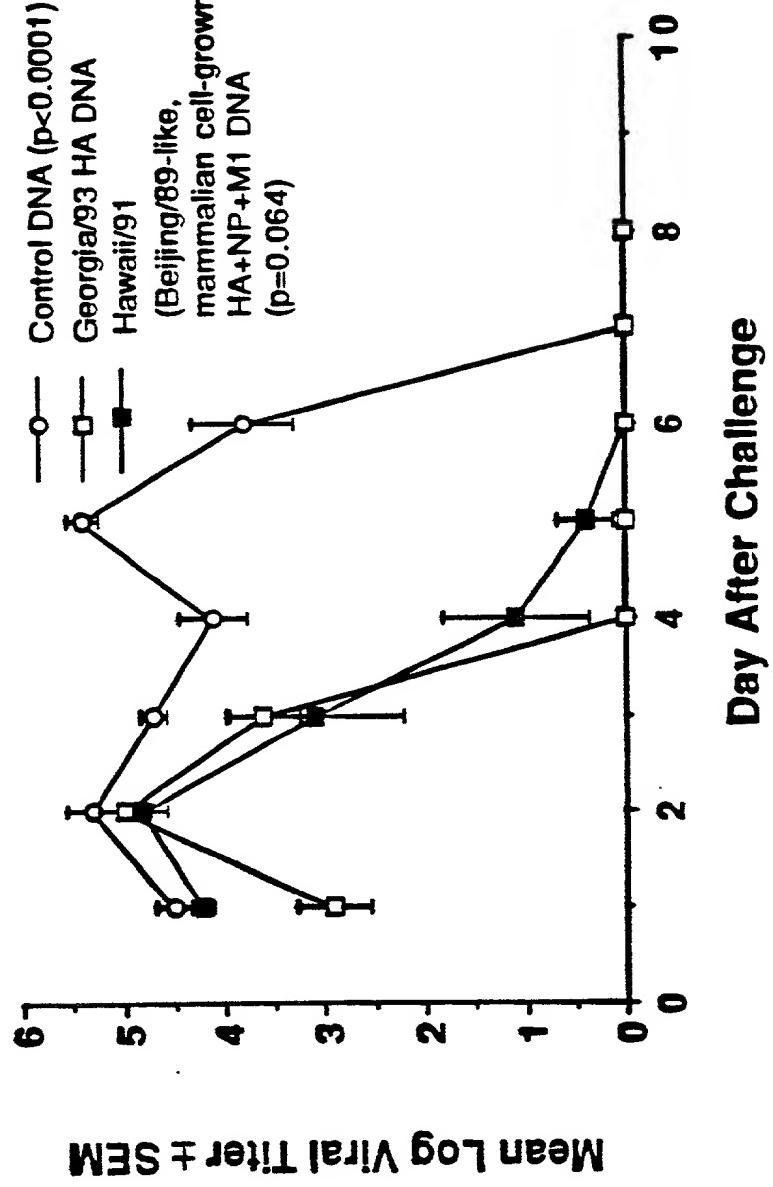


FIGURE 36, VIR SEQUENCE, SEQ.ID:45:

1 GATATTGG CTATGGCCA

251 TTGCATAACGT TGTATCCATA TCATAATATG TACATTATA TTGGCTCATG
 301 TCCAACATTAA CGGCCATGTT GACATTGATT ATTGACTAGT TATTAATAGT
 351 AATCAATTAC GGGGTCAATTAA GTTCATAGCC CATATATGGA GTTCCCGCGTT
 401 ACATAACTTA CGGTAAATGG CCCGCCTGGC TGACCGCCCA ACGACCCCCG
 451 CCCATTGACG TCAATAATGA CGTATGTTCC CATACTAACG CCAATAGGGA
 501 CTTTCCATTG ACGTCAATGG GTGGACTATT TACGGTAAAC TGCCCACITG
 551 GCAGTACATC AAGTGTATCA TATGCCAAGT ACGCCCCCTA TTGACGTCAA
 601 TGACGGTAAA TGGCCCGCCT GGCATTATGC CCAGTACATG ACCTTATGGG
 651 ACTTTCTAC TTGGCAGTAC ATCTACGTAT TAGTCATCGC TATTACCATG
 701 GTGATGCGGT TTTGGCAGTA CATCAATGGG CGTGGATAGC GGTTTGACTC
 751 ACGGGGATTTC CCAAGTCTCC ACCCCATTGA CGTCAATGGG AGTTTGTGTT
 801 GGCACCAAAAA TCAACGGGAC TTTCCAAAAT GTCGTAACAA CTCCGCCCCA
 851 TTGACGCAAA TGGGGGGTAG GCGTGTACGG TGGGAGGTCT ATATAAGCAG
 901 AGCTCGTTA GTGAACCGTC AGATCGCCTG GAGACGCCAT CCACGCTGTT
 951 TTGACCTCCA TAGAAGACAC CGGGACCGAT CCAGCCTCCG CGGCCGGGAA
 1001 CGGTGCATTG GAACGCGGAT TCCCCGTGCC AAGAGTGACG TAAGTACCGC
 1051 CTATAGAGTC TATAGGCCCA CCCCCCTTGGC TTCTTATGCA TGCTATACTG
 1101 TTTTTGGCTT GGGGTCTATA CACCCCCGCT TCCCTATGTT ATAGGTGATG
 1151 GTATAGCTTA GCCTATAGGT GTGGGTTATT GACCATTATT GACCACTCC
 1201 CTATTGGTGA CGATACTTC CATTACTAAT CCATAACATG GCTCTTGTCC
 1251 ACAACTCTCT TTATTGGCTA TATGCCAATA CACTGTCTT CAGAGACTGA
 1301 CACGGACTCT GTATTTTAC AGGATGGGT CTCATTATT ATTACAAAT
 1351 TCACATATAC AACACCACCG TCCCCAGTGC CGCGAGTTT TATTAACAT

Figure 36 (continued, p2/3)

1401 AACGTGGGAT CTCCACGCGA ATCTCGGGTA CGTGTCCGG ACATGGGCTC
 1451 TTCTCCGGTA GCGGCCGGAGC TTCTACATCC GAGCCCTGCT CCCATGCCTC
 1501 CAGCGACTCA TGGTCGCTCG GCAGCTCCTT GCTCTAACAA GTGGAGGCCA
 1551 GACTTAGGCA CAGCACGATG CCCACCACCA CCAGTGTGCC GCACAAGGCC
 1601 GTGGCGGTAG GGTATGTGTC TGAAAATGAG CTGGGGGAGC GGGCTTGAC
 1651 CGCTGACGCA TTGGAAAGAC TTAAGGCAGC GGCAGAAGAA GATGCAGGCA
 1701 GCTGAGTTGT TGTGTTCTGA TAAGAGTCAG AGGTAACCTCC CGTTGCGGTG
 1751 CTGTTAACGG TGGAGGGCAG TGTAGTCTGA GCAGTACTCG TTGCTGCCGC
 1801 GCGGCCACC AGACATAATA GCTGACAGAC TAACAGACTG TTCTTTCCA
 1851 TGGGTCTTTT CTGCAGTCAC CGTCCTTAG ATCTGCTGTG CCTTCTAGTT
 1901 GCCAGCCATC TGTTGTTGC CCCTCCCCCG TGCTTCCTT GACCTGGAA
 1951 GGTGCCACTC CCACTGTCTT TTCTAATAA AATGAGGAAA TTGCATCGCA
 2001 TTGCTGAGT AGGTGTCATT CTATTCGGG GGGTGGGGTG GGGCAGCACA
 2051 GCAAGGGGGA GGATTGGAA GACAATAGCA GGCATGCTGG GGATGCGGTG
 2101 GGCTCTATGG GTAC GGCGCAGCGGCC GTACCCAGGT GCTGAAGAAT
 TGACCCGGTT CCTCGACCGT AAAAAGGCCG
 2601 CGTTGCTGGC GTTTTCCAT AGGCTCCGCC CCCTGACGA GCATCACAAA
 2651 AATCGACGCT CAAGTCAGAG GTGGCGAAAC CCGACAGGAC TATAAAGATA
 2701 CCAGGCGTTT CCCCCTGGAA GCTCCCTCGT GCGCTCTCCT GTTCCGACCC
 2751 TGCCGCTTAC CGGATACCTG TCCGCCTTTC TCCCTCGGG AAGCGTGGCG
 2801 CTTCTCAAT GCTCACGCTG TAGGTATCTC AGTTCGGTGT AGGTGTTCG
 2851 CTCCAAGCTG GGCTGTGTGC ACGAACCCCC CGTTCAGCCC GACCGCTGCG
 2901 CCTTATCCGG TAACTATCGT CTGAGTCCA ACCCGGTAAAG ACACGACTTA
 2951 TCGCCACTGG CAGCAGCCAC TGGTAACAGG ATTAGCAGAG CGAGGTATGT
 3001 AGGCGGTGCT ACAGAGTTCT TGAAGTGGTG GCCTAACTAC GGCTACACTA

Figure 36 (continued, p3/3)

3051 GAAGGACAGT ATTTGGTATC TGCGCTCTGC TGAAGCCAGT TACCTTCGGA
 3101 AAAAGAGTTG GTAGCTCTTG ATCCGGCAAA CAAACCACCG CTGGTAGCGG
 3151 TGGTTTTTTT GTTTGCAAGC AGCAGATTAC GCGCAGAAAA AAAGGATCTC
 3201 AAGAAGATCC TTTGATCTTT TCTACGTGATCC CGTAATGC TCTGCCAGTG
 TTACAACCAA TTAACCAATT CTGATTAGAA
 3751 AAACATCATCG AGCATCAAAT GAAACTGCAA TTTATTATA TCAGGATTAT
 3801 CAATACCATA TTTTGAAAAA AGCCGTTCT GTAATGAAGG AGAAAACCTA
 3851 CCGAGGCAGT TCCATAGGAT GGCAAGATCC TGGTATCGGT CTGCGATTCC
 3901 GACTCGTCCA ACATCAATAC AACCTATTAA TTTCCCCTCG TCAAAAATAA
 3951 GGTTATCAAG TGAGAAATCA CCATGAGTGA CGACTGAATC CGGTGAGAAT
 4001 GGCAAAAGCT TATGCATTTC TTTCCAGACT TGTCAACAG GCCAGCCATT
 4051 ACGCTCGTCA TCAAAATCAC TCGCATCAAC CAAACCGTTA TTCATTGTG
 4101 ATTGCGCCTG AGCGAGACGA AATACGCGAT CGCTGTTAAA AGGACAATTA
 4151 CAAACAGGAA TCGAATGCAA CCGGCGCAGG AACACTGCCA GCGCATCAAC
 4201 AATATTTCA CCTGAATCAG GATATTCTTC TAATACCTGG AATGCTGTTT
 4251 TCCCGGGGAT CGCAGTGGTG AGTAACCATG CATCATCAGG AGTACGGATA
 4301 AAATGCTTGA TGGTCGGAAG AGGCATAAAAT TCCGTCAGCC AGTTTAGTCT
 4351 GACCATCTCA TCTGTAACAT CATTGGCAAC GCTACCTTTG CCATGTTTCA
 4401 GAAACAACTC TGGCGCATCG GGCTTCCCAT ACAATGATA GATTGTCGCA
 4451 CCTGATTGCC CGACATTATC GCGAGCCCAT TTATACCCAT ATAAATCAGC
 4501 ATCCATGTTG GAATTAAATC GCGGCCTCGA GCAAGACGTT TCCC GTGAA
 4551 TATGGCTCAT AACACCCCTT GTATTACTGT TTATGTAAGC AGACAGTTT
 4601 ATTGTTICATG ATGATATATT TTTATCTTGT GCAATGTAAC ATCAGAGATT
 4651 TTGAGACACA ACGTGGCTTT CC

Figure 37

